



THE  
**CYCLOPÆDIA;**  
OR,  
**Universal Dictionary**  
OF  
**ARTS, SCIENCES, AND LITERATURE.**

PLATES. VOL. IV.  
NAVIGATION — WRITING BY CIPHER.



ARTS, SCIENCES, AND LITERATURE.

THIRD EDITION.

EDITED BY JOHN WILKINSON.



THE  
CYCLOPÆDIA;

OR,

UNIVERSAL DICTIONARY

OF

Arts, Sciences, and Literature.

BY

ABRAHAM REES, D.D. F.R.S. F.L.S. *S. Amer. Soc.*

WITH THE ASSISTANCE OF

EMINENT PROFESSIONAL GENTLEMEN.



ILLUSTRATED WITH NUMEROUS ENGRAVINGS,

BY THE MOST DISTINGUISHED ARTISTS.

PLATES. VOL. IV.

NAVIGATION — WRITING BY CIPHER.

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1820.





MERIDIAN

MERIDIONAL parts

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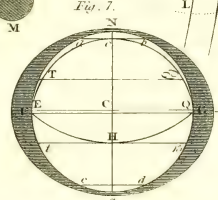
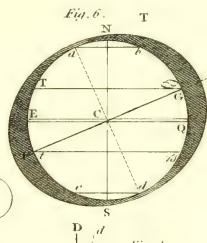
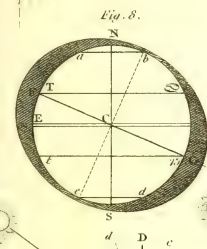
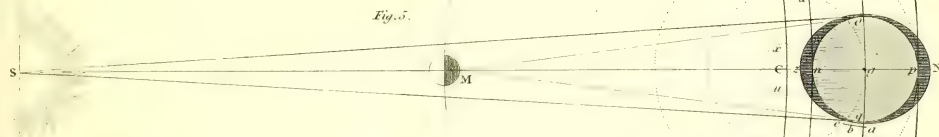
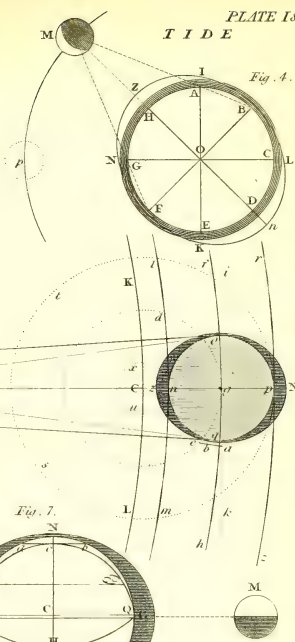
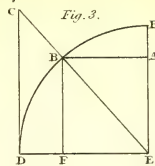
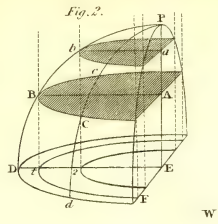
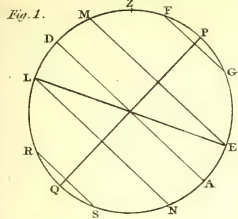
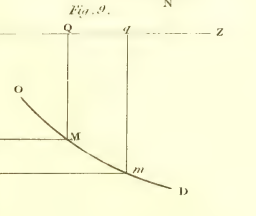
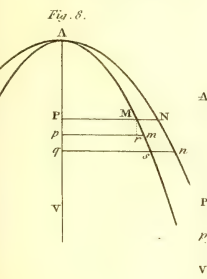
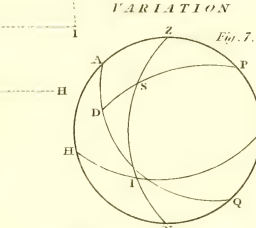
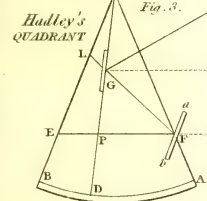
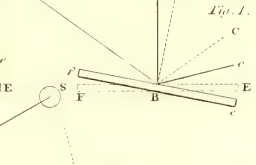
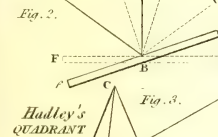
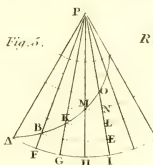
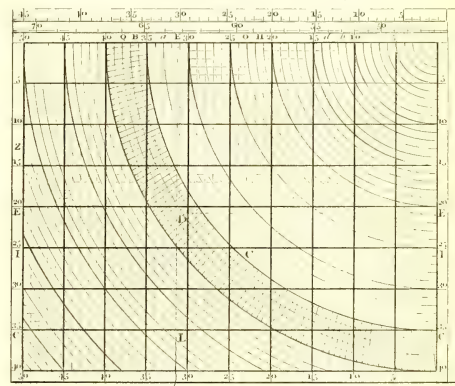


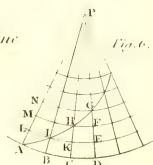
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Sinical QUADRANT



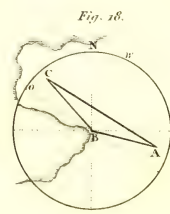
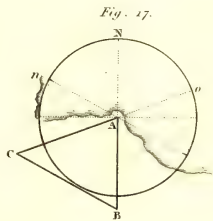
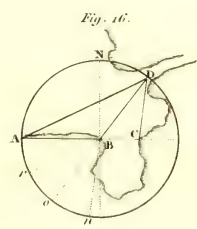
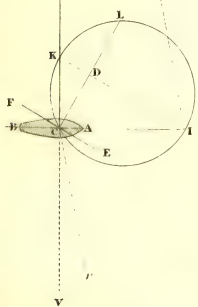
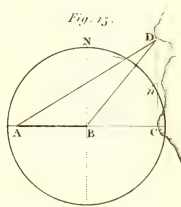
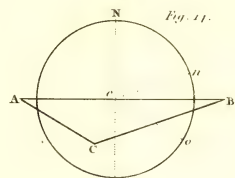
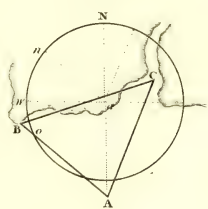
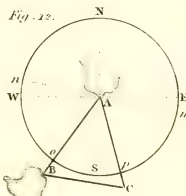
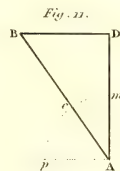
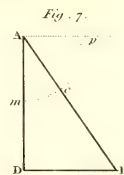
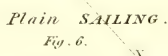
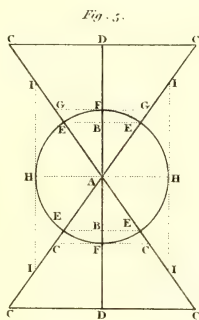
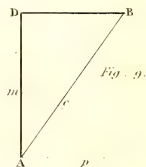
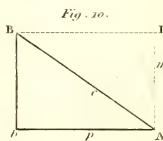
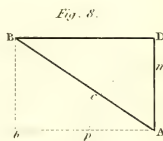
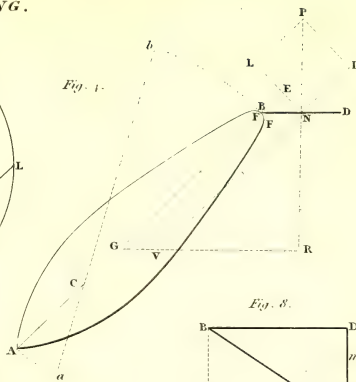
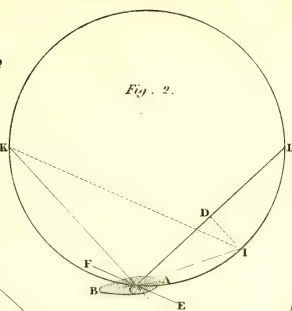
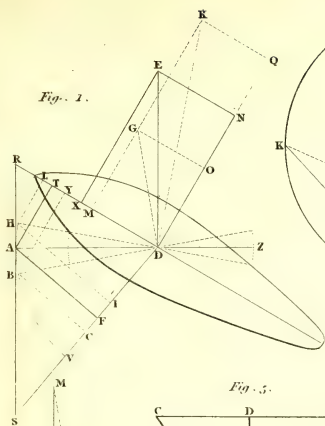
RHUMB Line







NAVIGATION  
*RUDDER AND SAILING.*



*Plain SAILING.*





Plain SAILING.

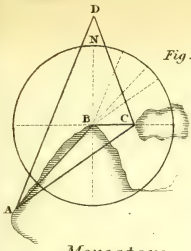


Fig. 19.

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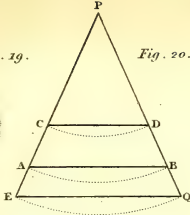


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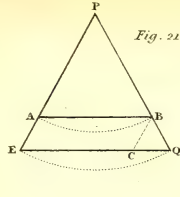


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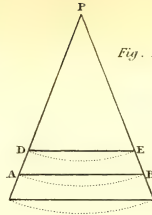


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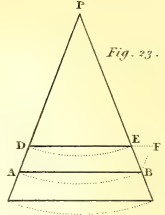


Fig. 23.

Mercators SAILING.

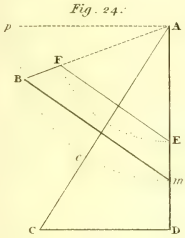


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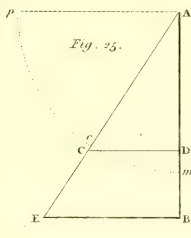


Fig. 25.

Great Circle SAILING.

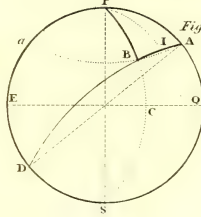


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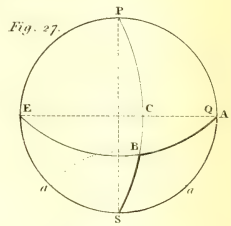


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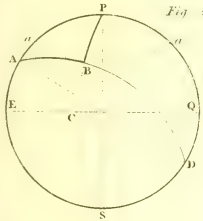


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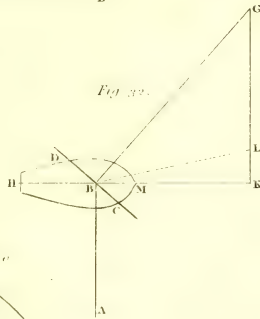


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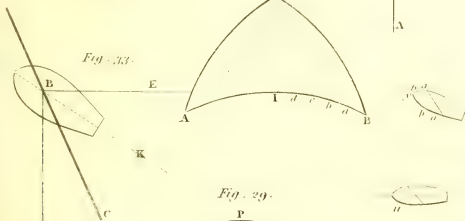


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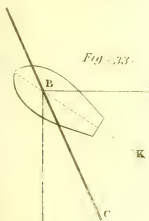


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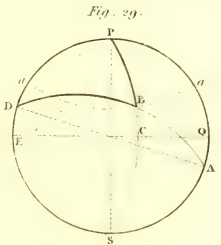


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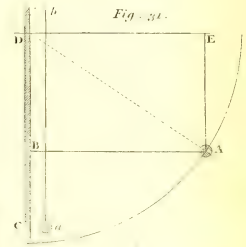


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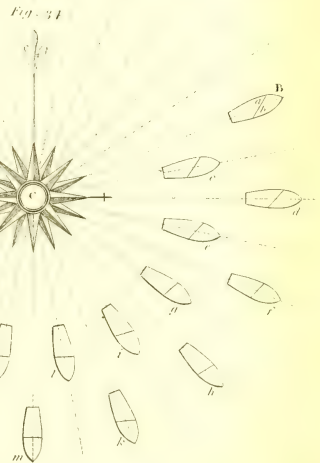


Fig. 34.





Fig. 1.

## TRAVERSE SAILING

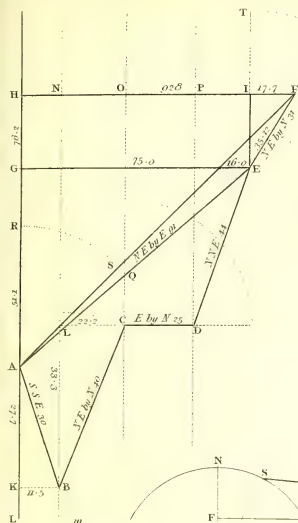
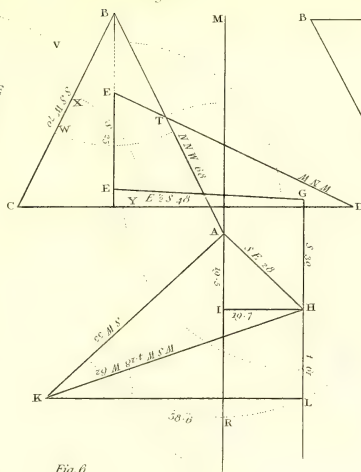


Fig. 2.



## CURRENT SAILING

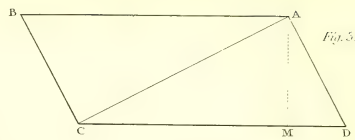


Fig. 3.

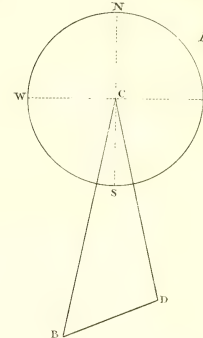


Fig. 4.

Fig. 5.

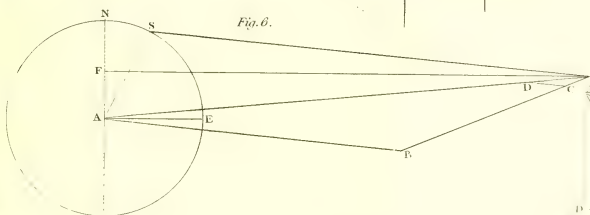
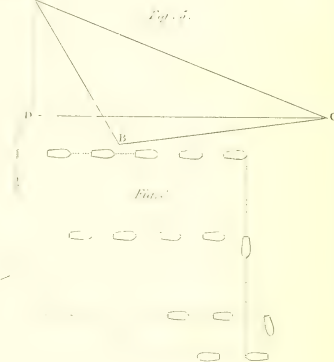


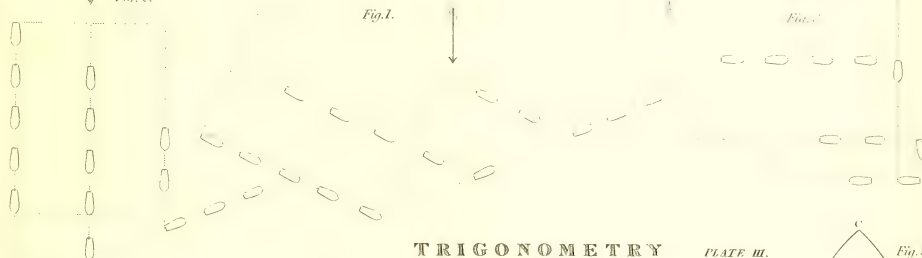
Fig. 6.



## NAVAL TACTICS CONVOY

Fig. 1.

Fig. 2.



## TRIGONOMETRY

## PLATE III.

Fig. 1.

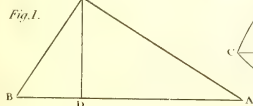


Fig. 2.

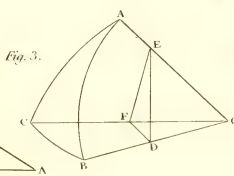


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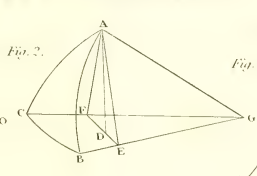


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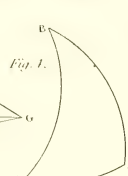
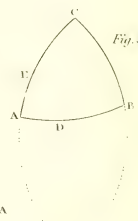


Fig. 5.



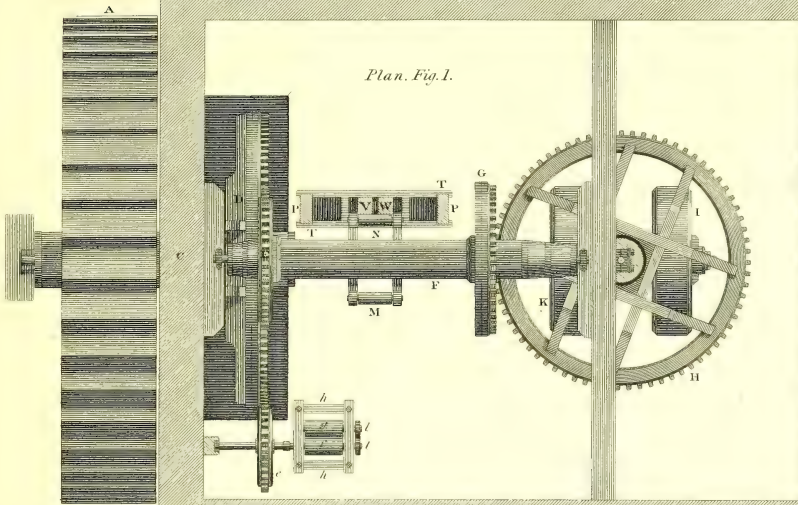




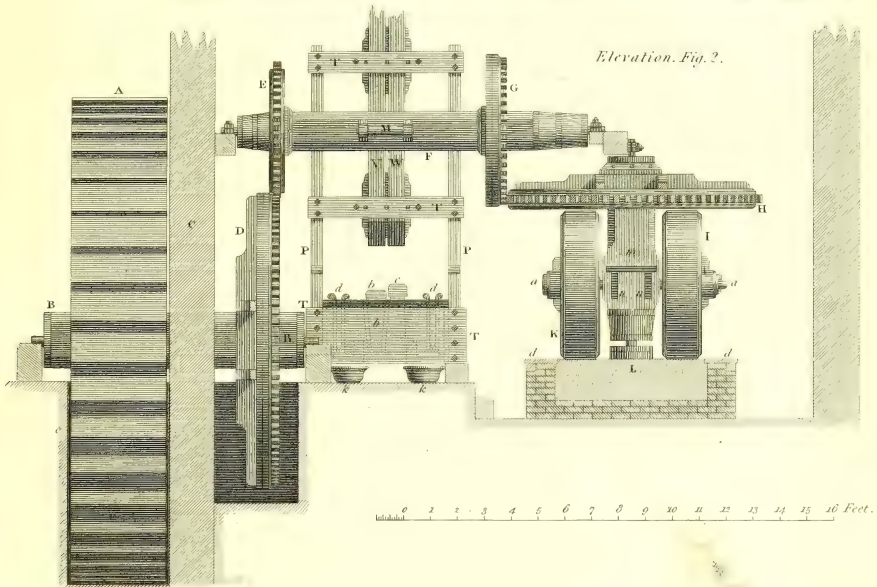
# OIL MILL.

BY MR SMEATON.

Plan. Fig. 1.



Elevation. Fig. 2.







## ABERRATION.

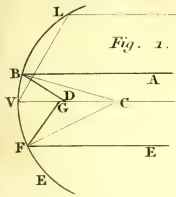


Fig. 1.

## ANGLE.

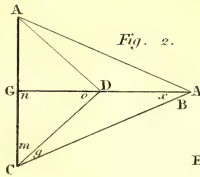


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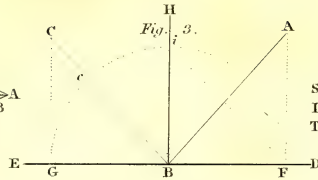


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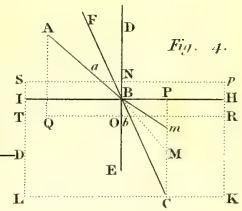
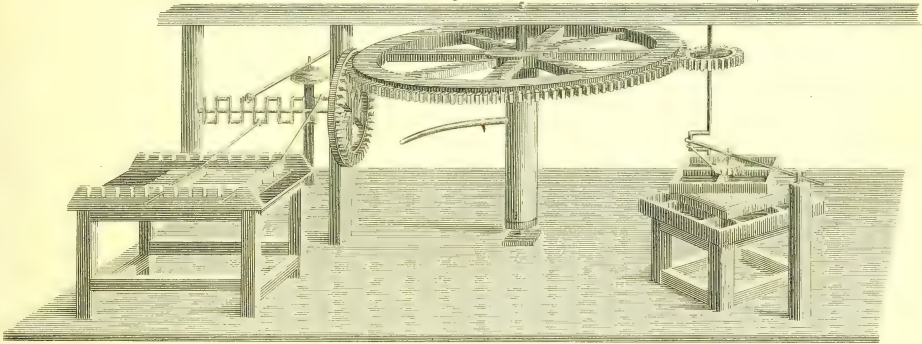
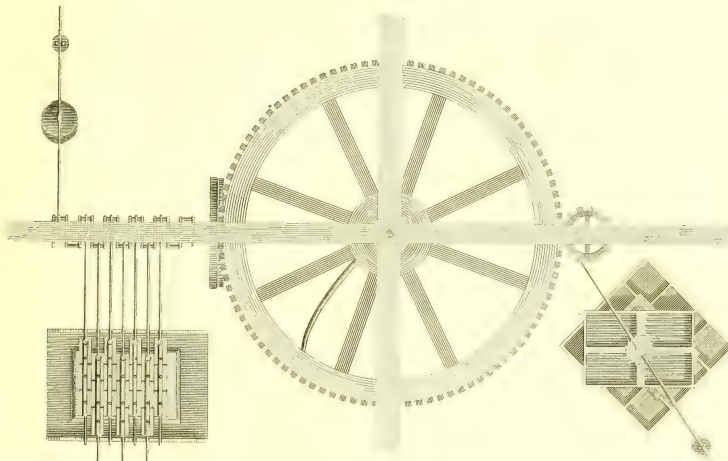


Fig. 4.

BURROUGHS'S MACHINE, from a MODEL of the SOCIETY of ARTS, &c.  
Fig. 5.



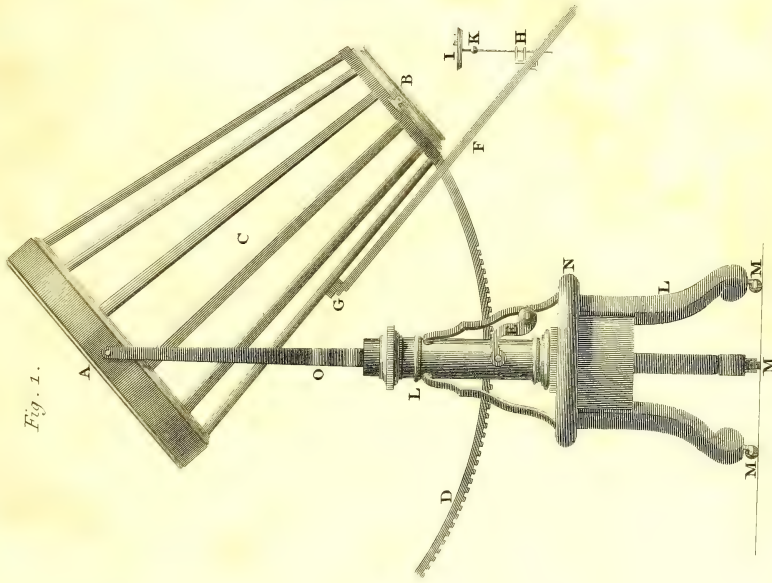
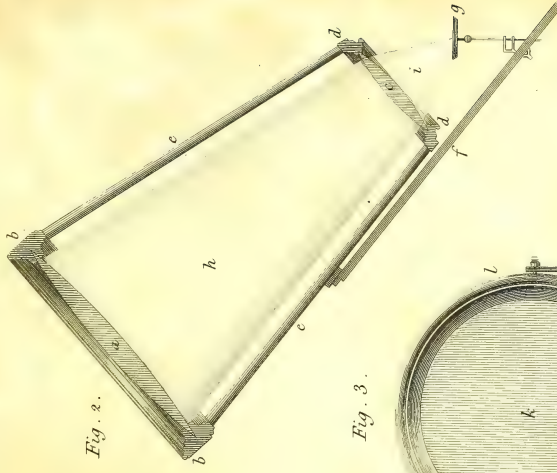
## PLAN







## PARKER'S BURNING LENS.

*Fig. 2.**Fig. 3.*



OPTICS.  
CAMERA OBSCURA.

PLATE III.

Fig. 1.

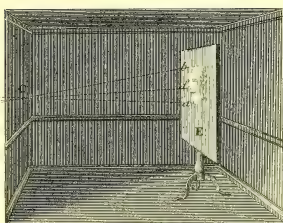


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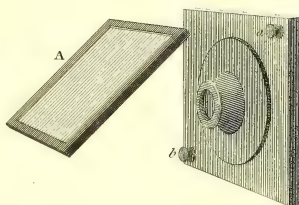


Fig. 3.

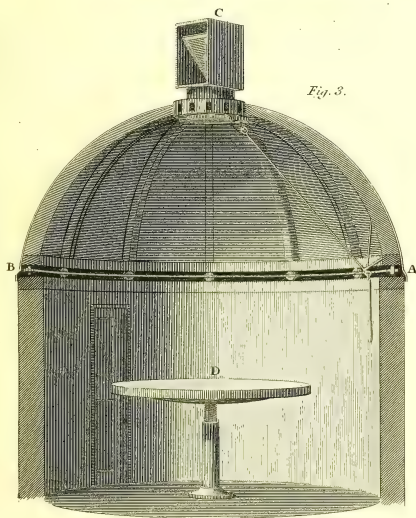


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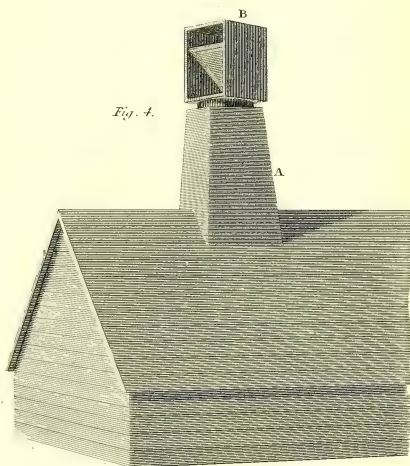


Fig. 5.

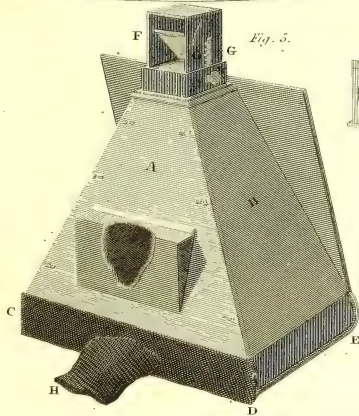


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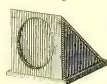
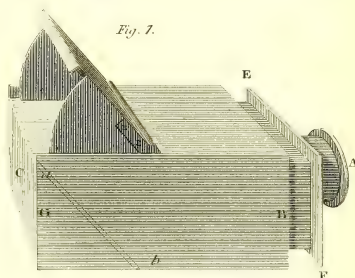
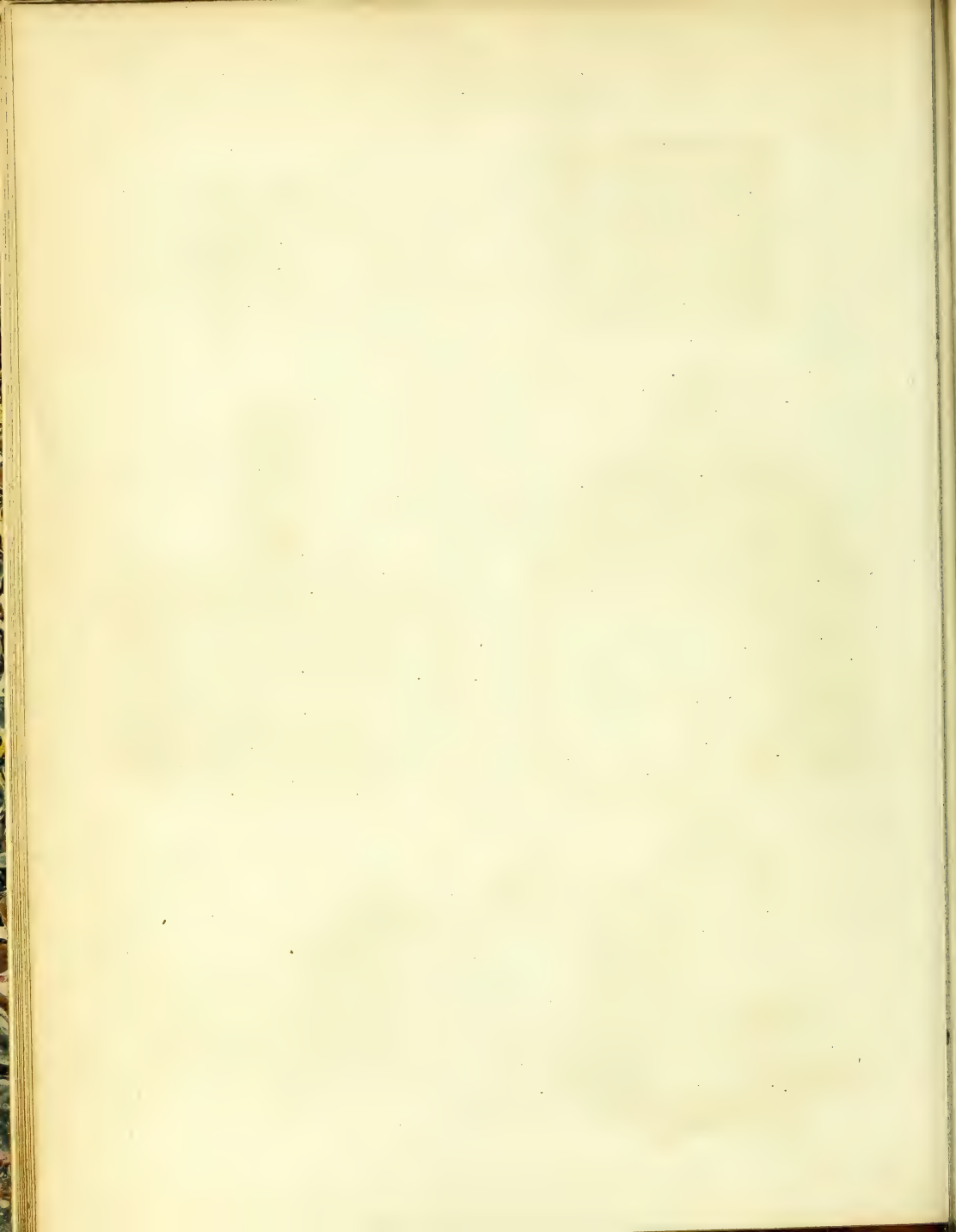
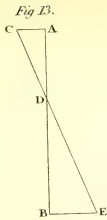
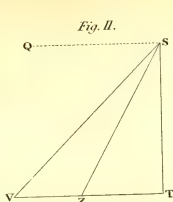
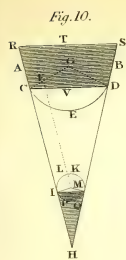


Fig. 7.



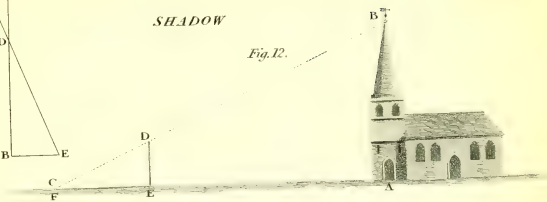






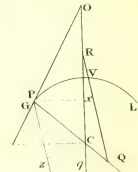
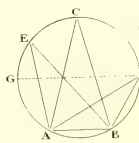
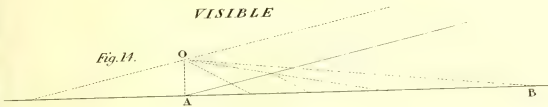
SHADOW

Fig. 12.



VISIBLE

Fig. 11.



FOCUS

Fig. 8.

DIOPTRICS



Fig. 2.

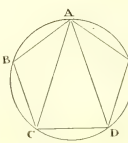
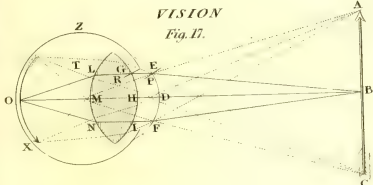


Fig. 16.



VISION

LOOKING GLASS

Fig. 9.

CATOPTRIC CISTULA

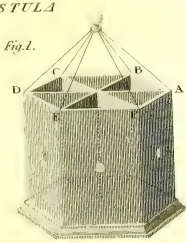
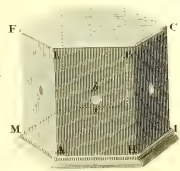
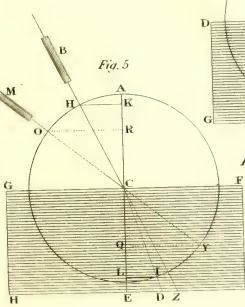


Fig. 2.



CATOPTICS and DIOPTRICS

Fig. 5.



DISPERSION of Light

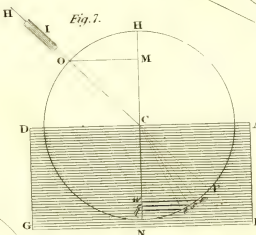
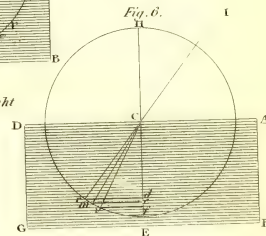
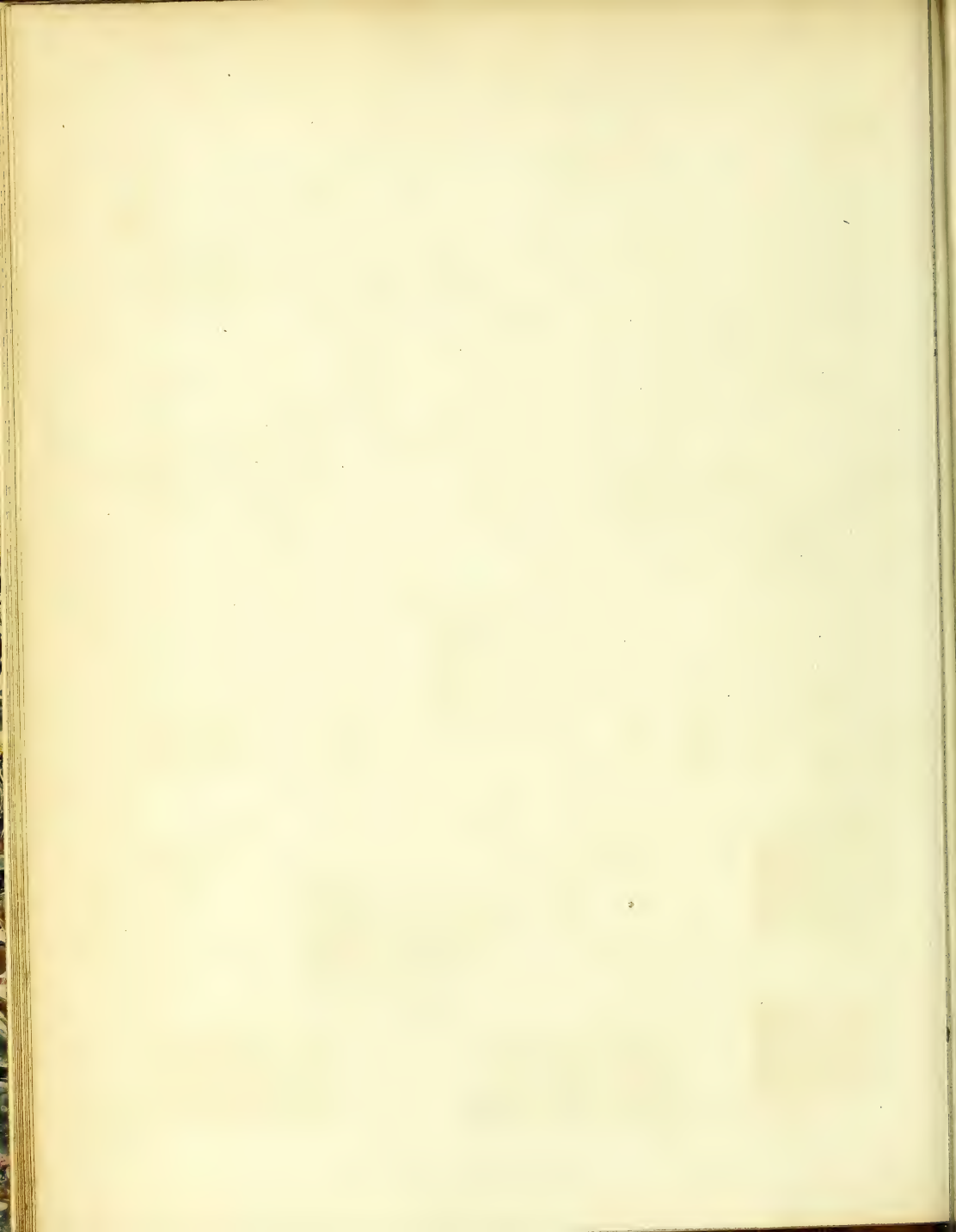


Fig. 6.

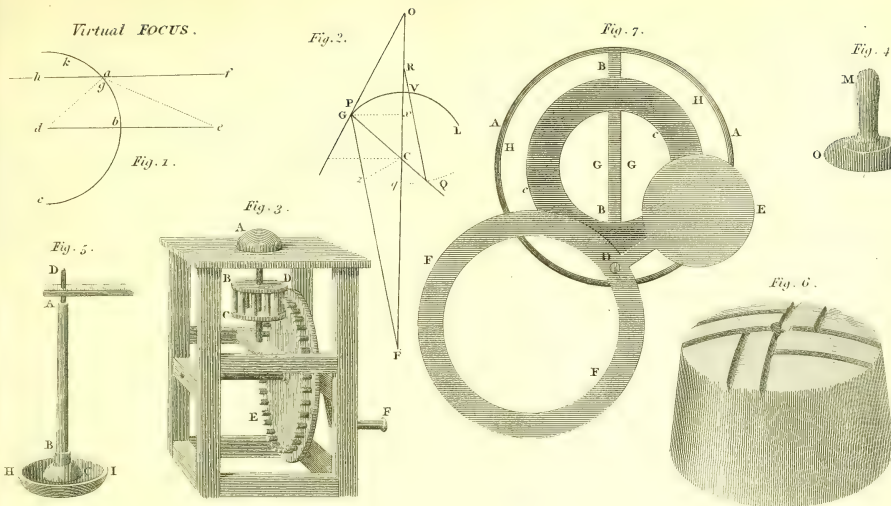






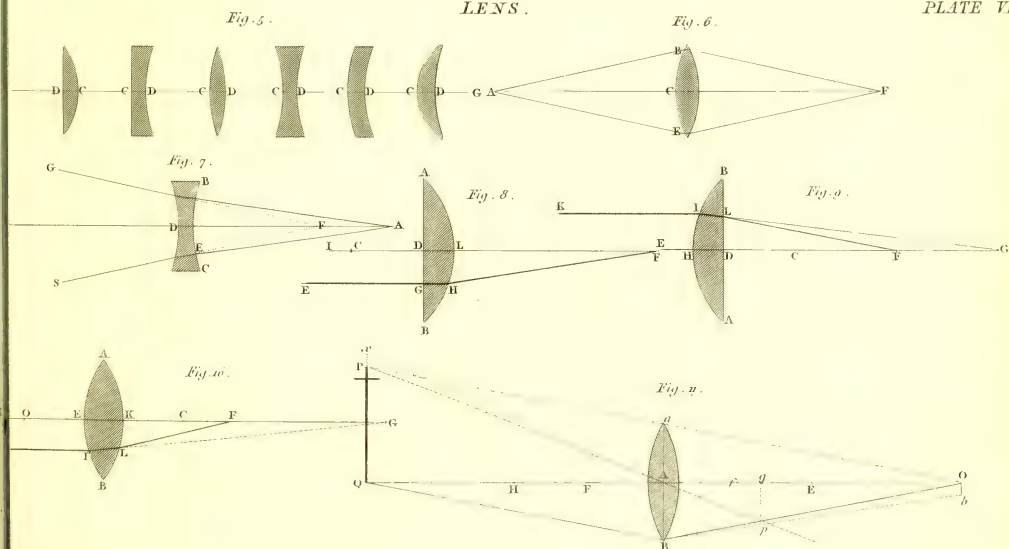
# OPTICS. GRINDING.

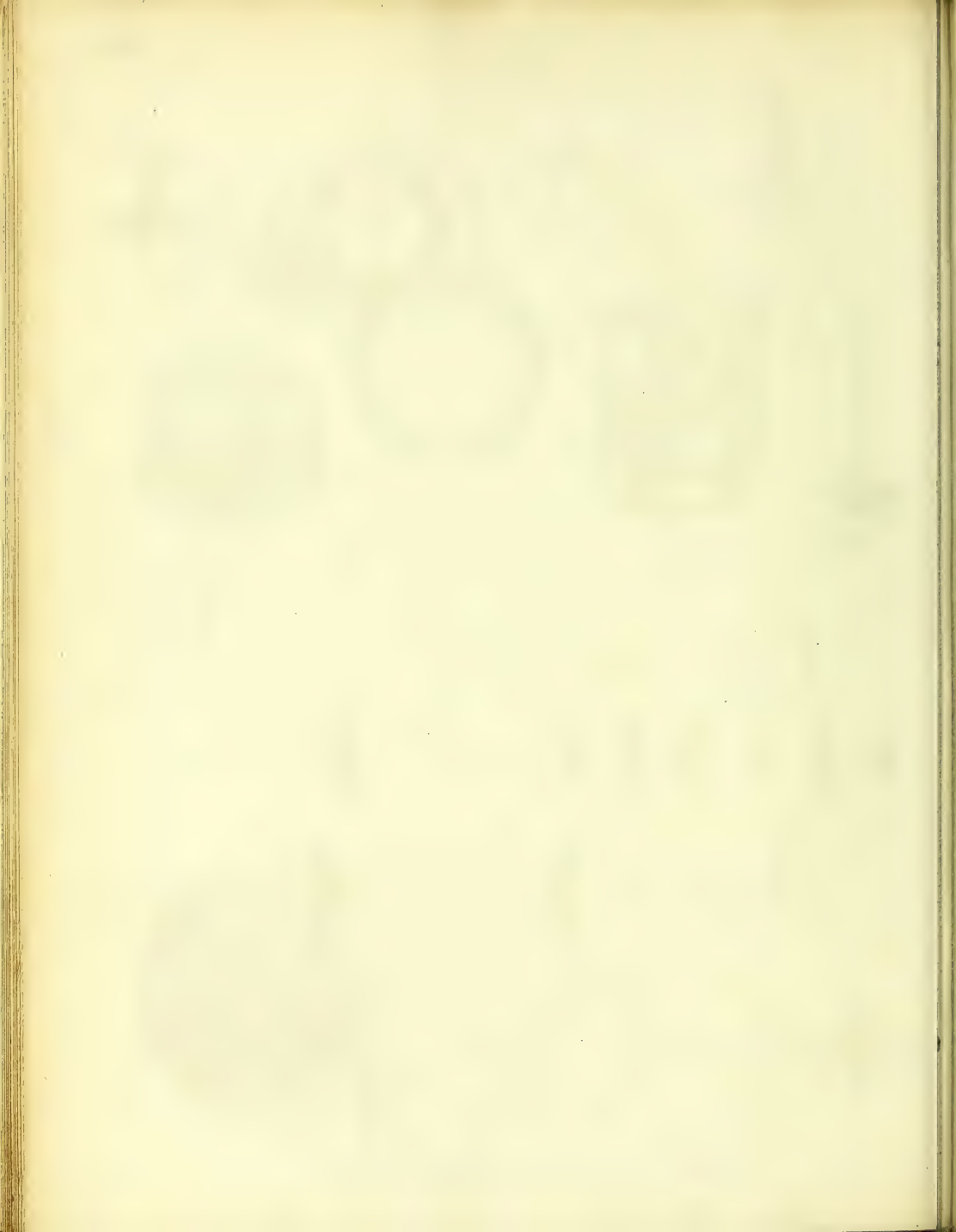
PLATE V.



# OPTICS.

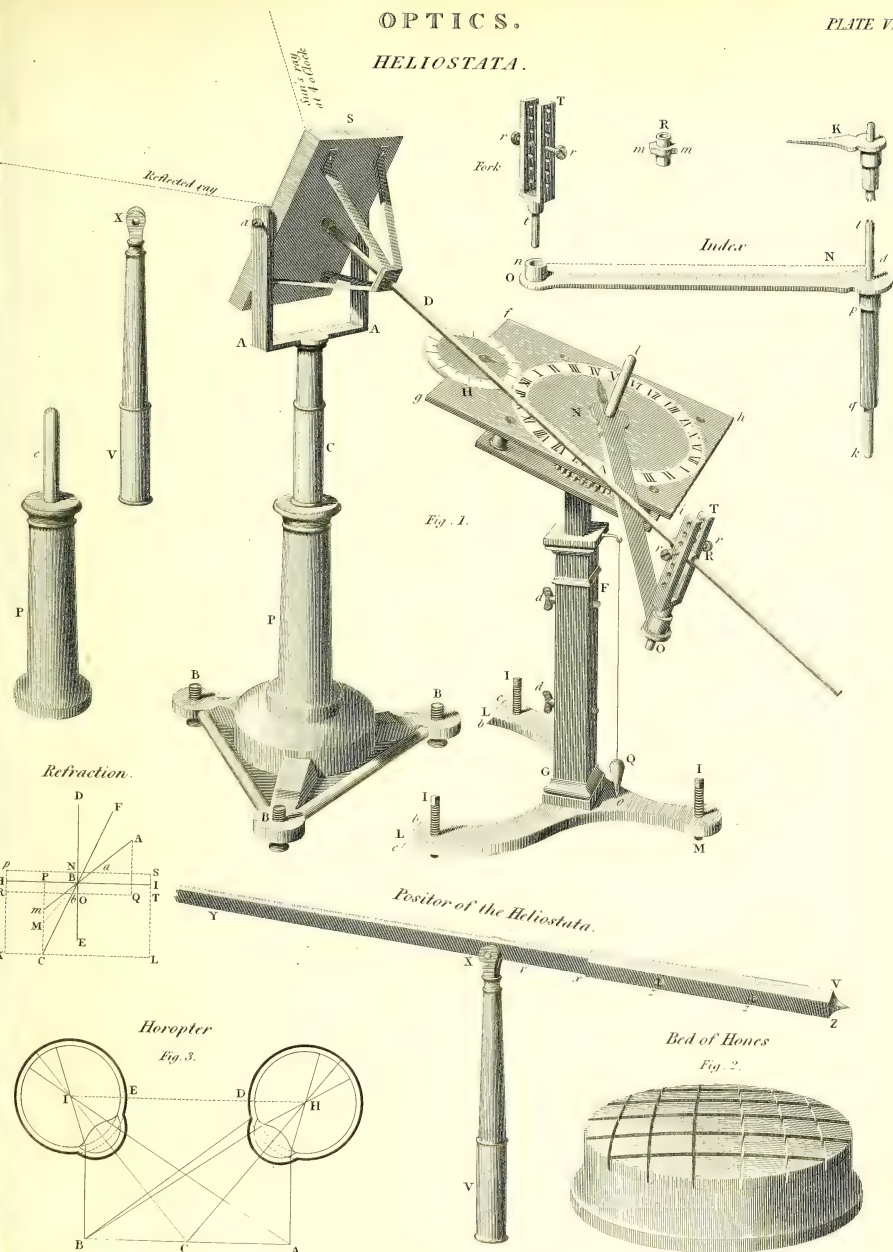
PLATE VI



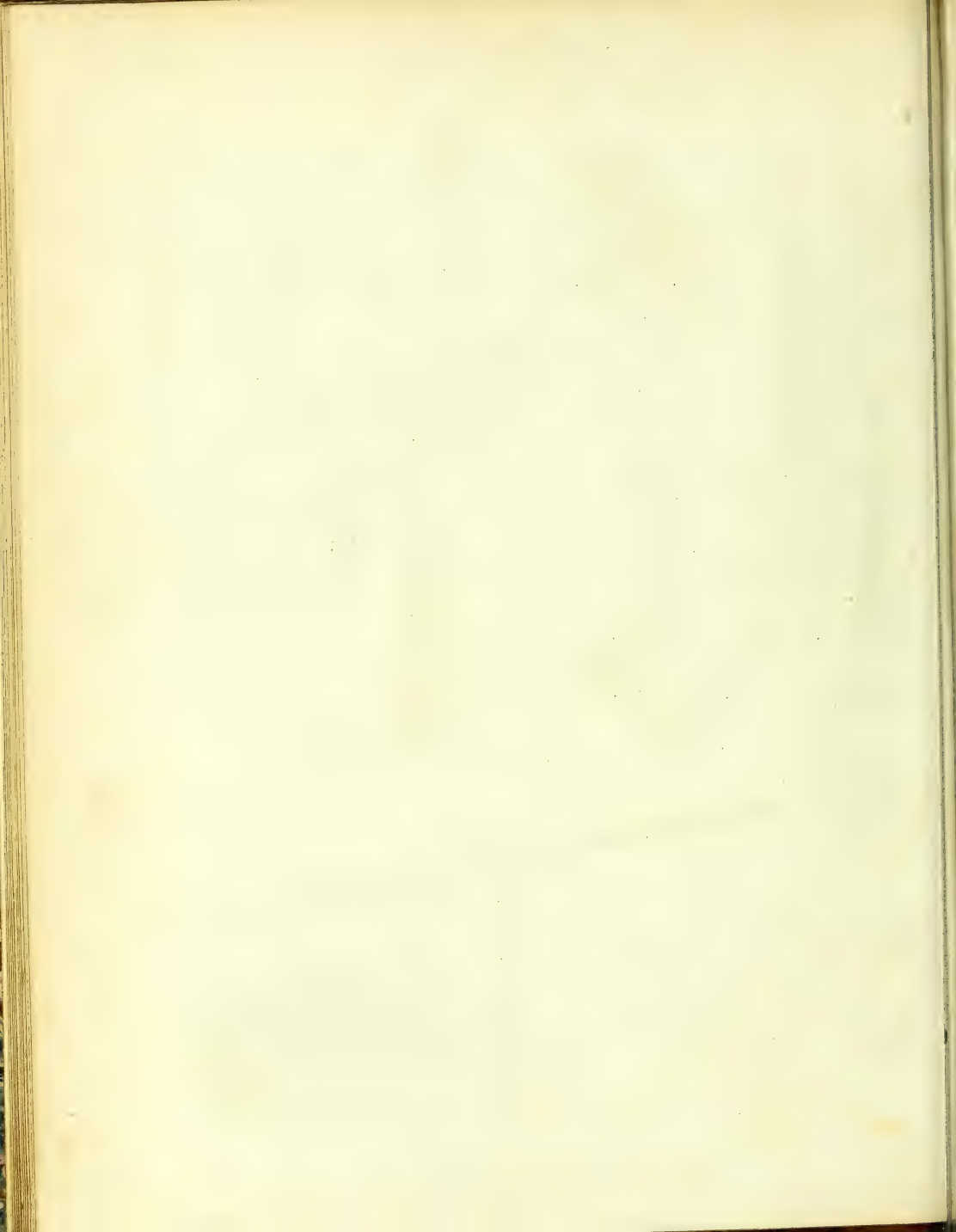


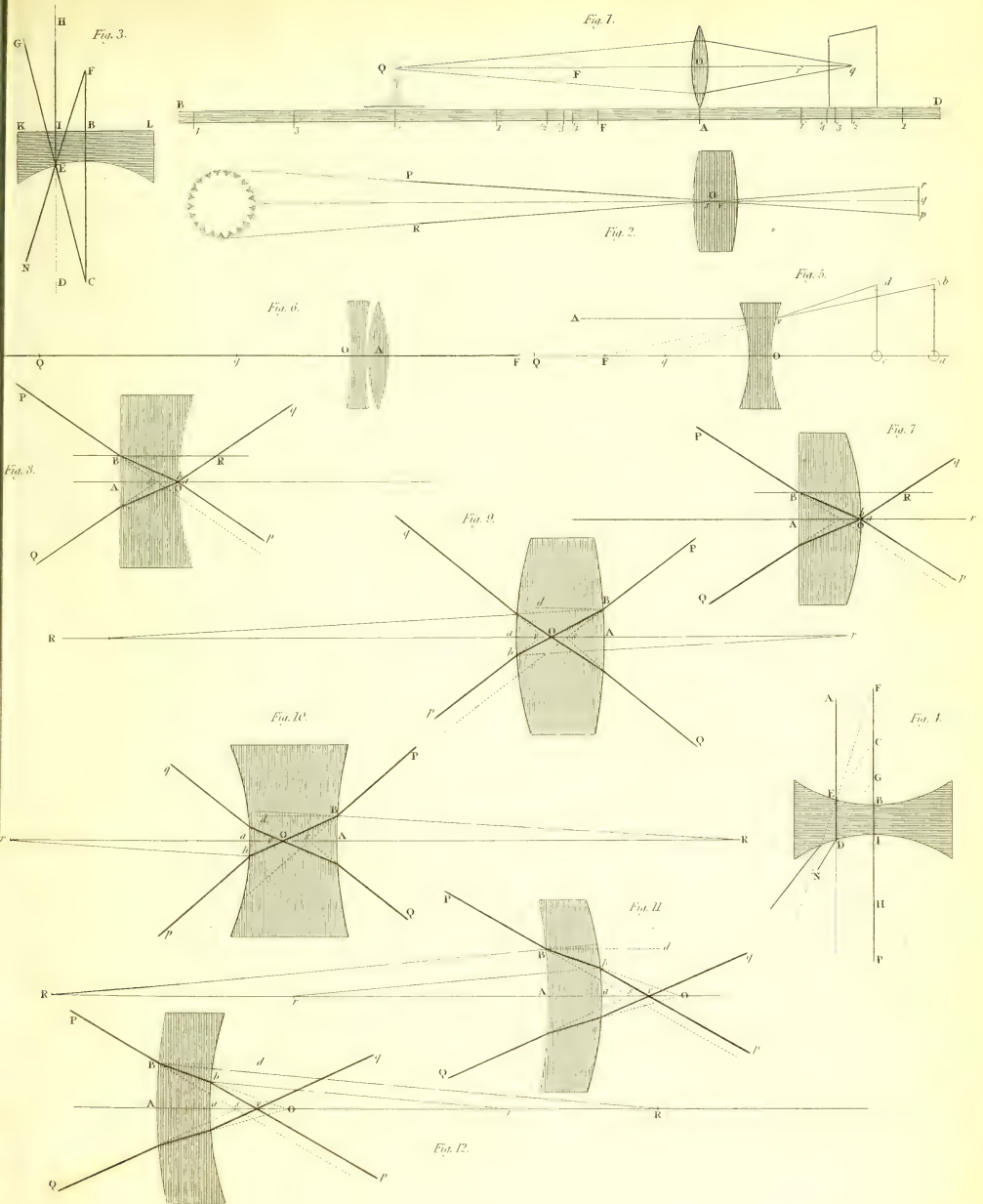
# OPTICS. HELIOSTATA.

PLATE VI continued.









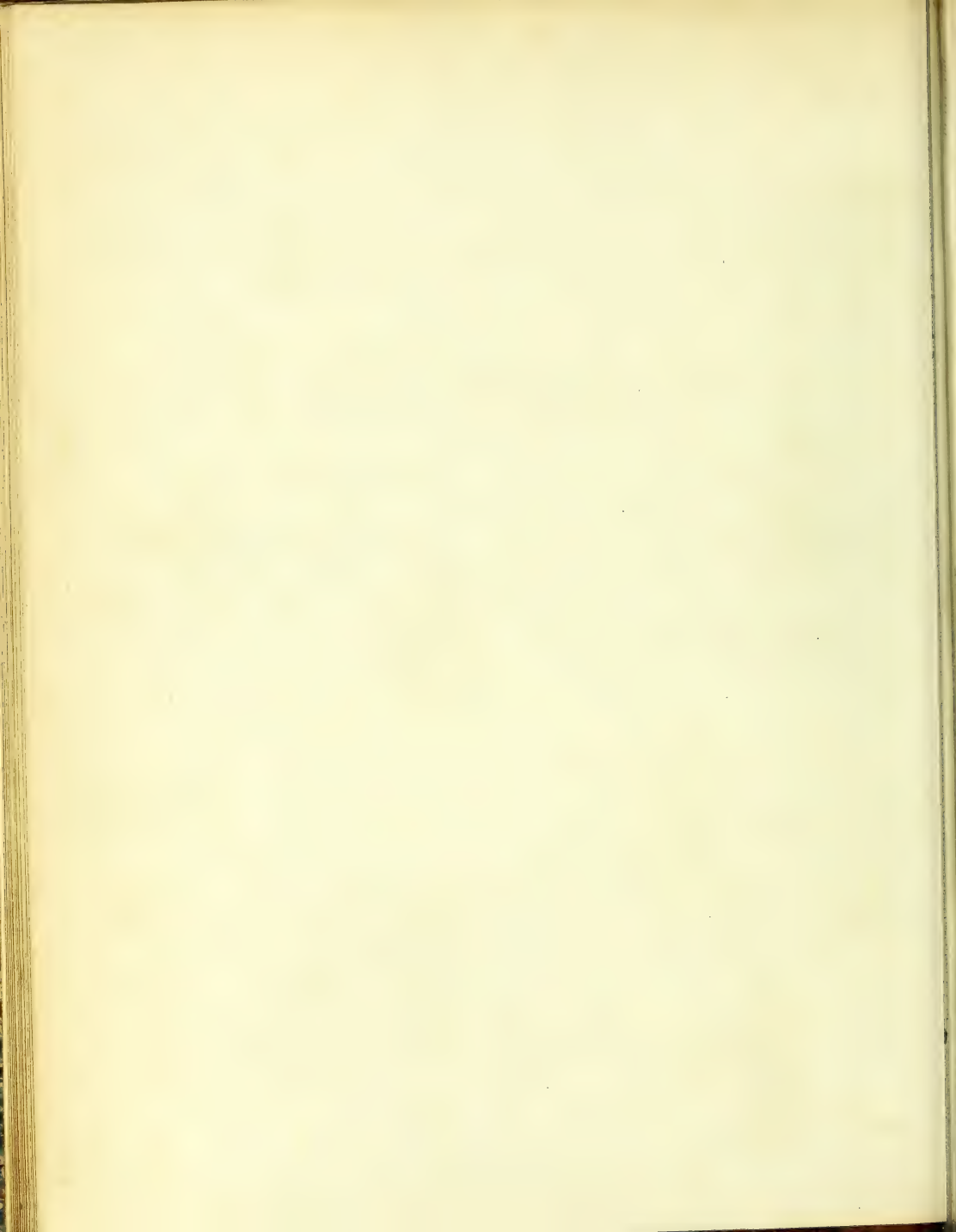




Fig. 7.

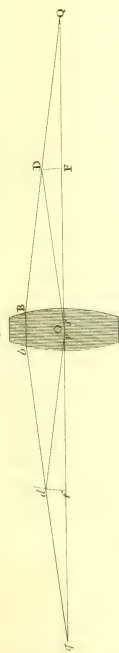


Fig. 8.

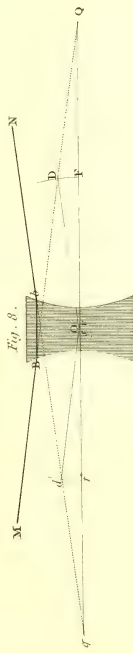


Fig. 9.

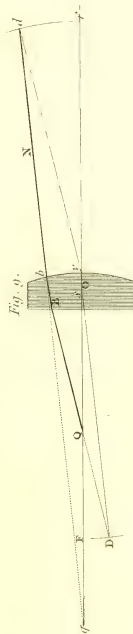


Fig. 10.

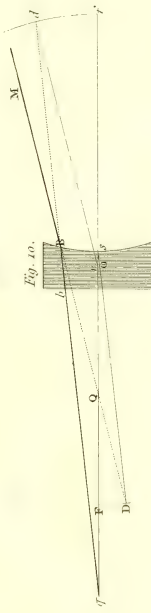


Fig. 11.

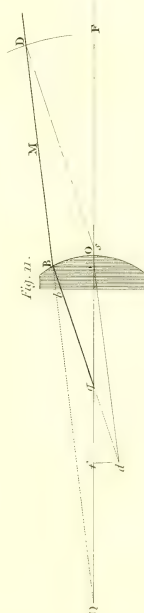


Fig. 12.

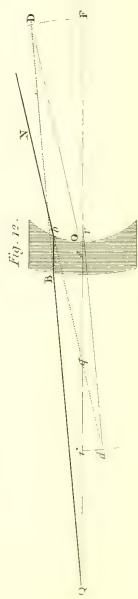


Fig. 2.



Fig. 1.



Fig. 3.

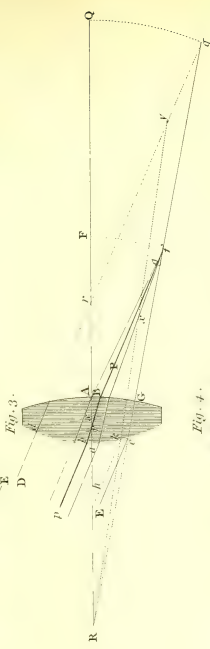


Fig. 4.

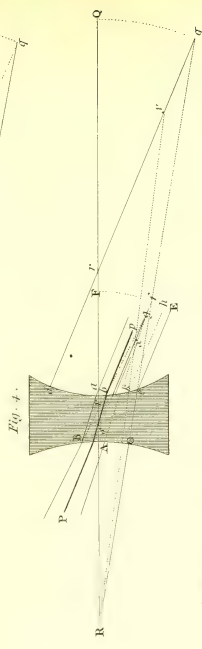


Fig. 5.

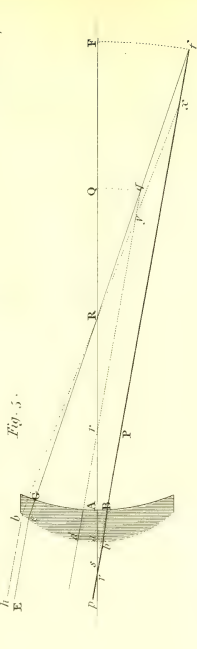
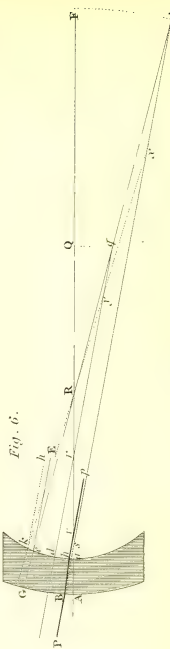
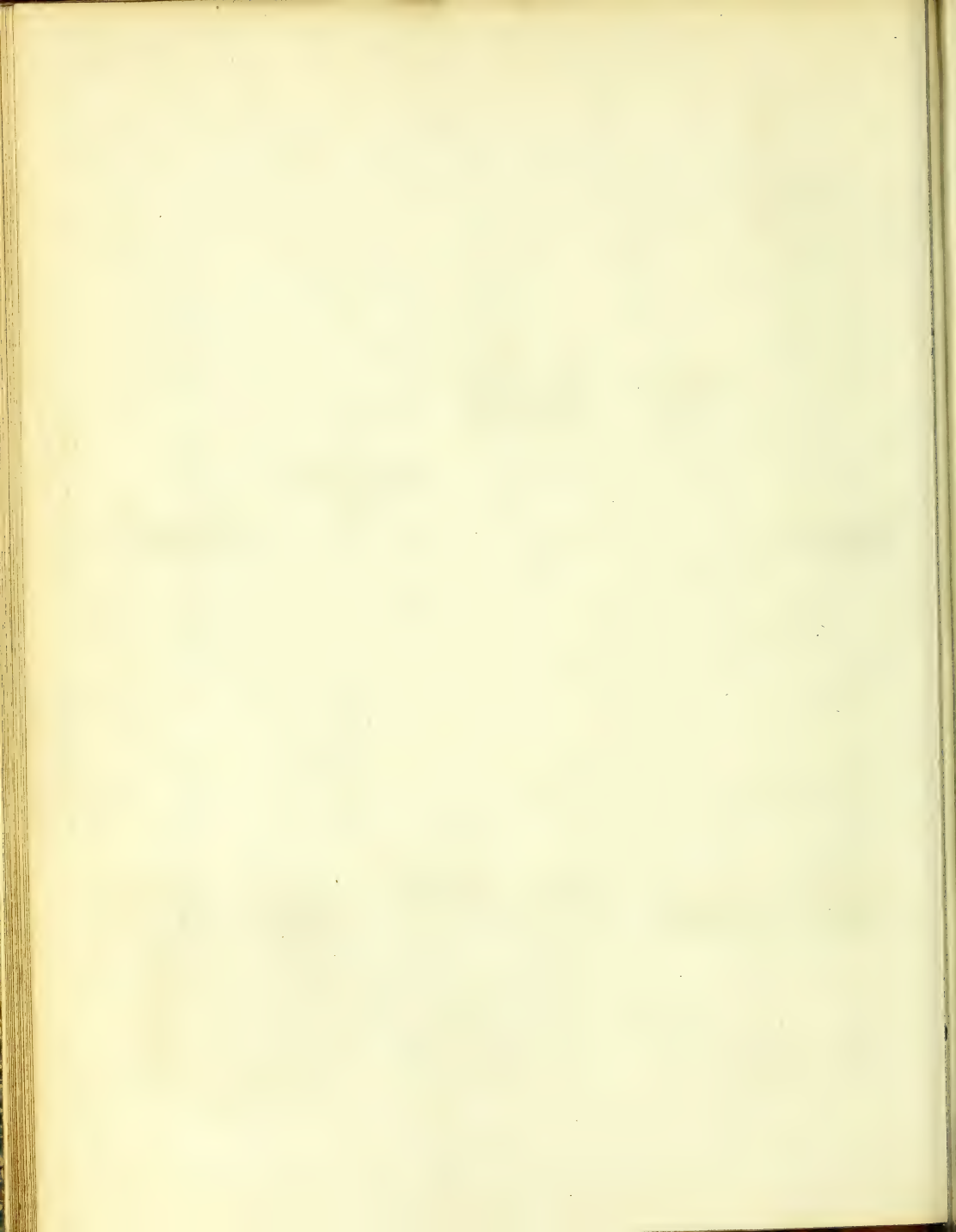


Fig. 6.





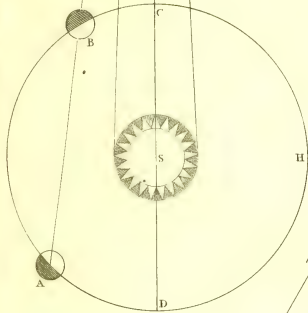
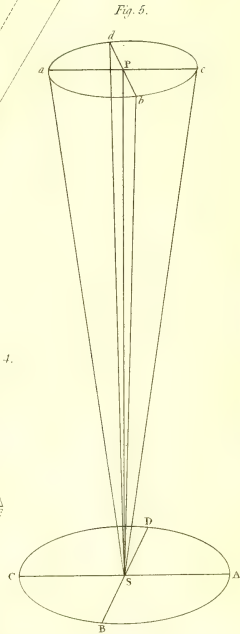
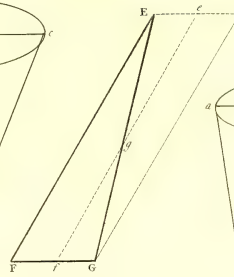
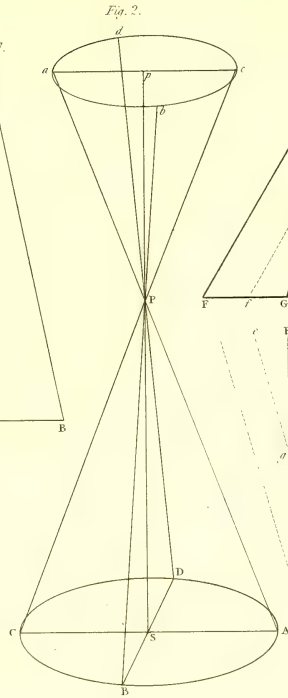
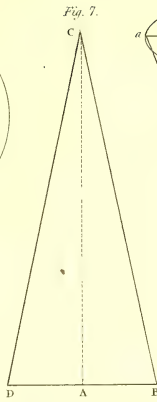
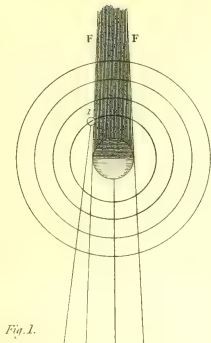
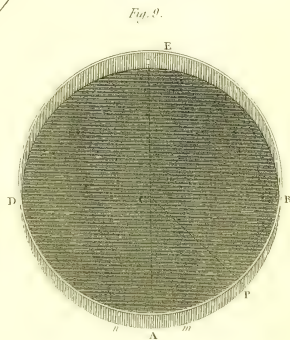
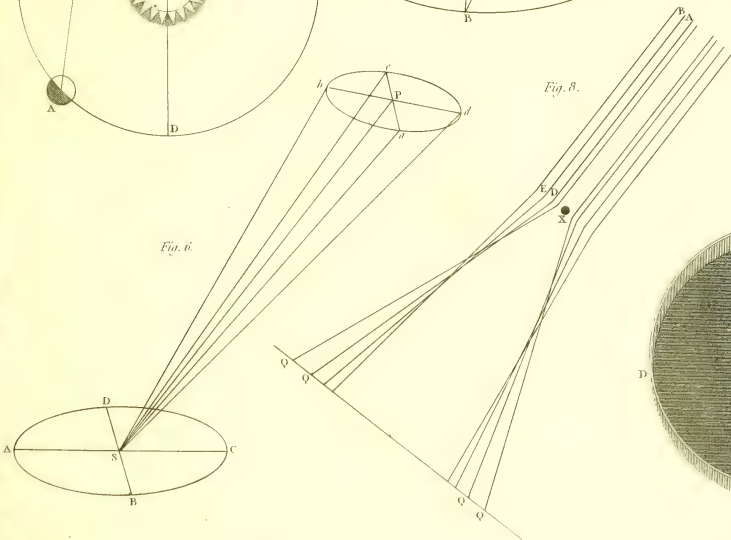


Fig. 6.





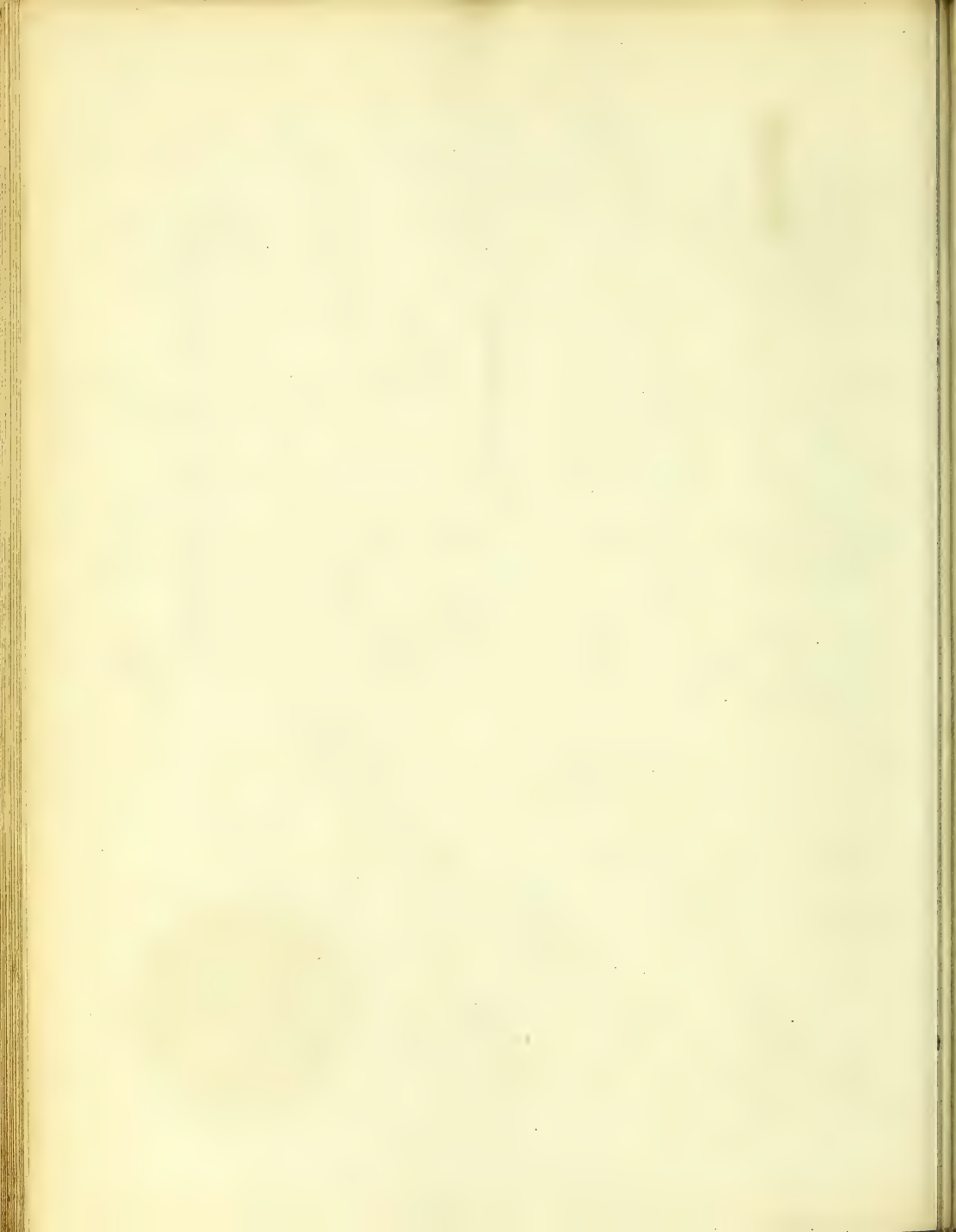
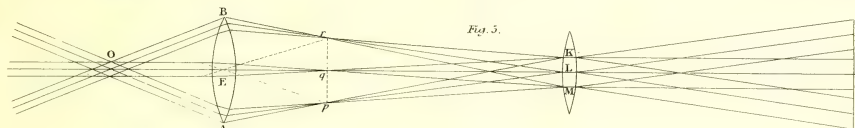
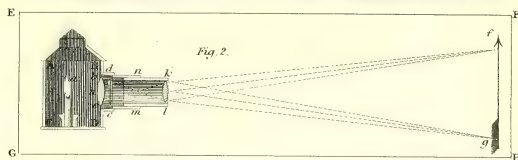
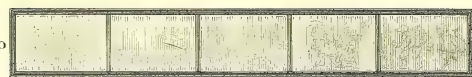
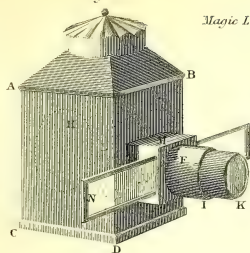


Fig. 1.

Magic Lantern



MICROMETER

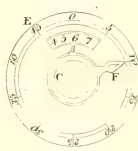
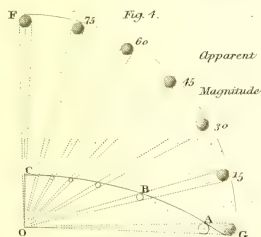


Fig. 6.

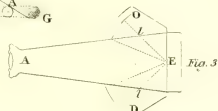
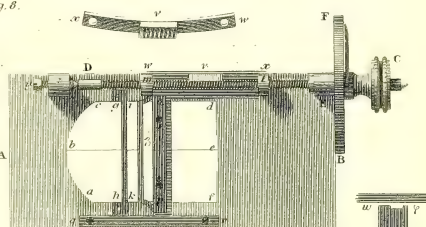


Fig. 9.

Fig. 10.

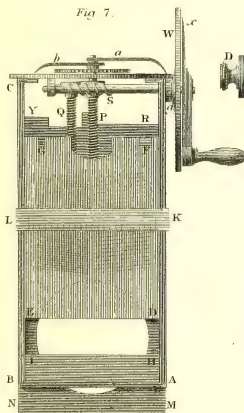


Fig. 11.

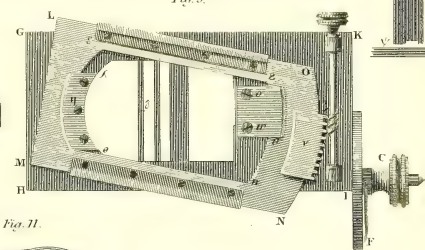
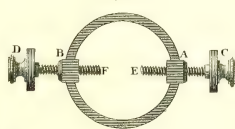


Fig. 13.

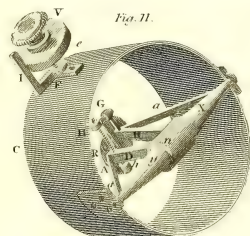
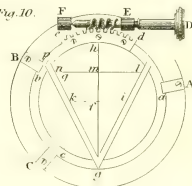
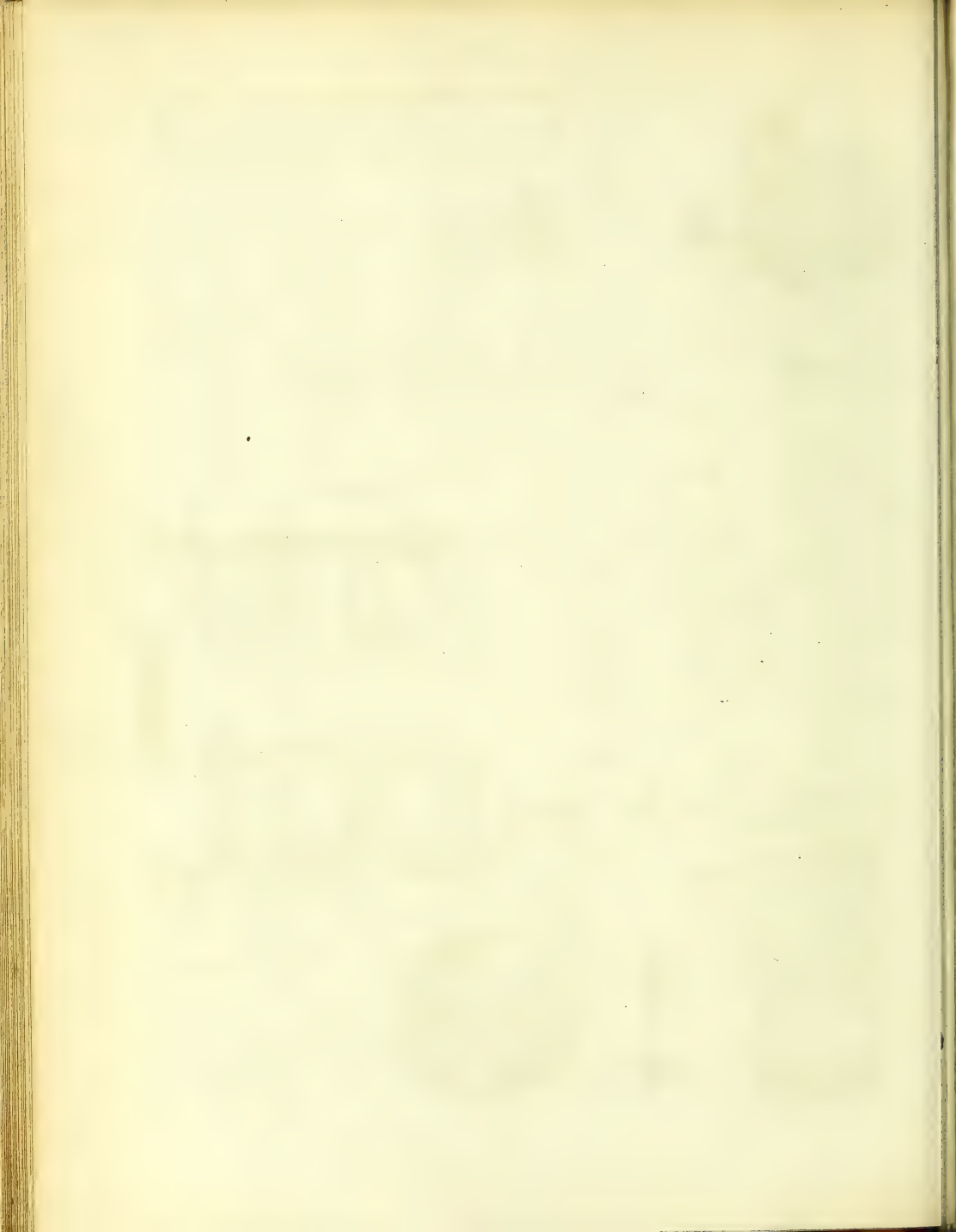
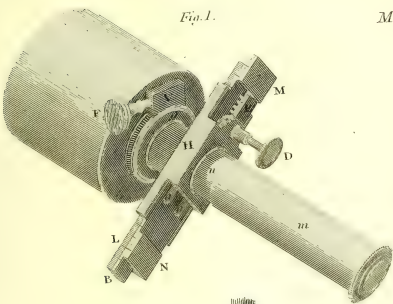


Fig. 14.

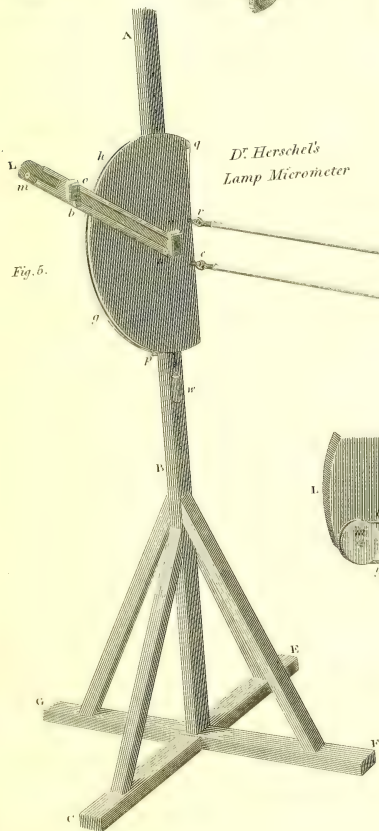
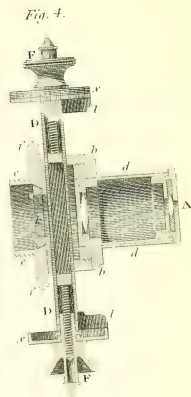
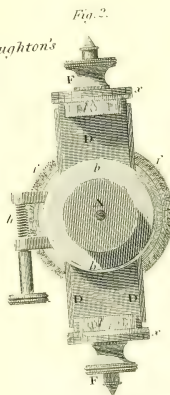
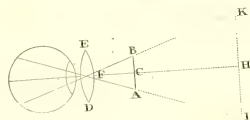
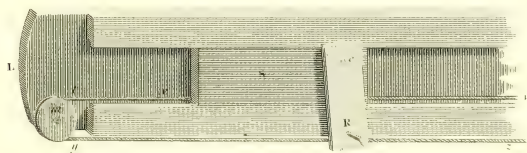
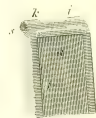
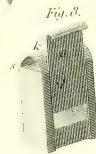
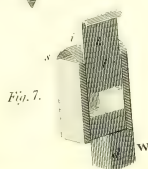




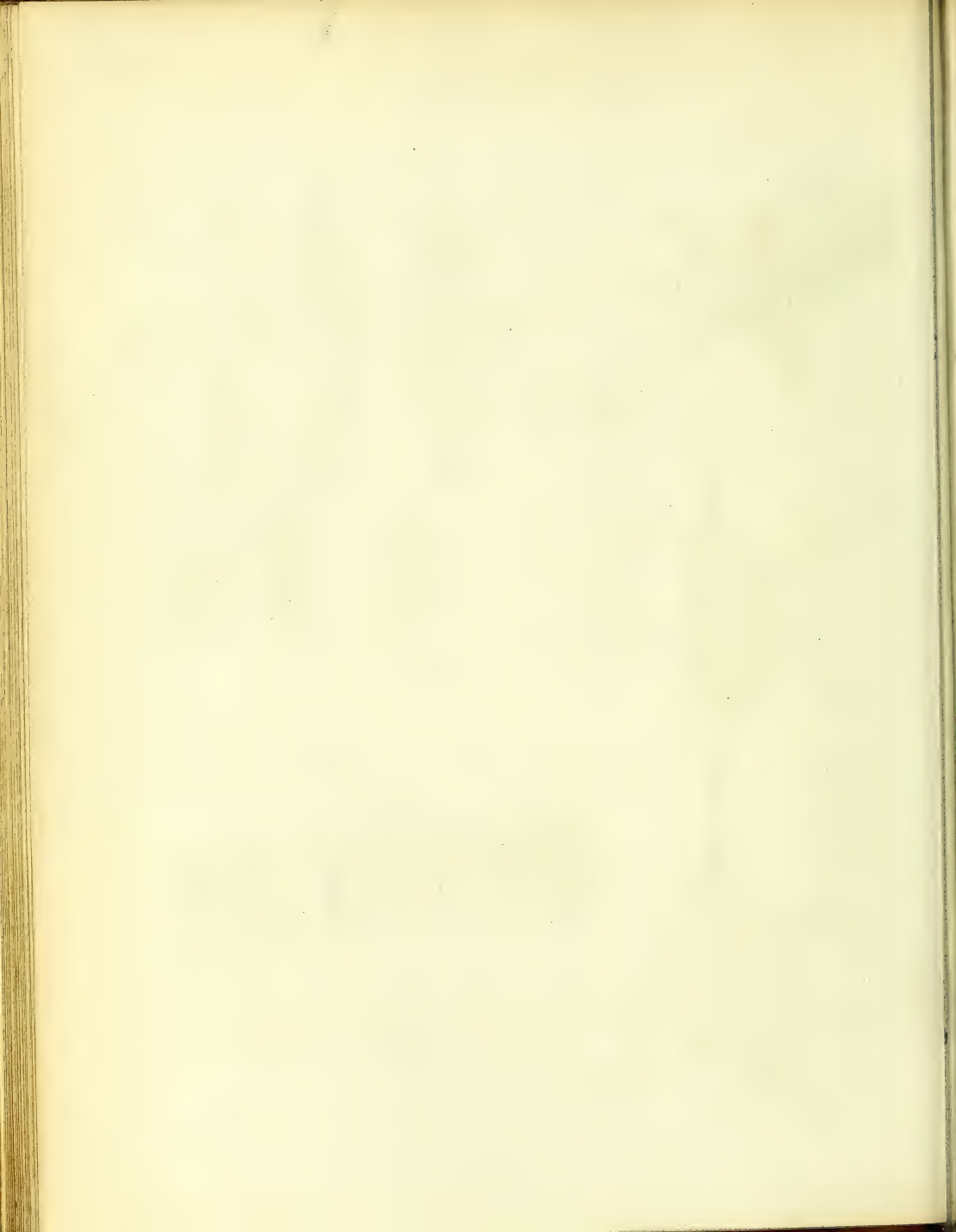
*D<sup>r</sup> Maskelyne's*



*M. Troughton's*

*D<sup>r</sup>. Herschel's  
Lamp Micrometer*





# OPTICS. MICROSCOPE *Single.*

PLATE XII.

Fig. 1.

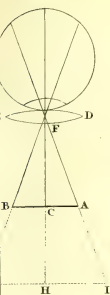


Fig. 3.

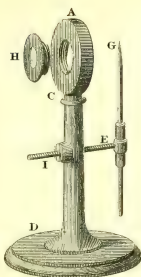


Fig. 2.

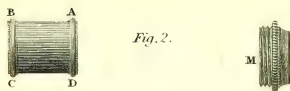


Fig. 4.

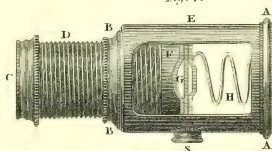


Fig. 5.

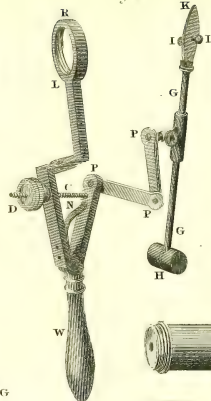


Fig. 6.

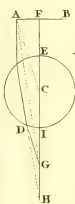


Fig. 7.



Fig. 12.

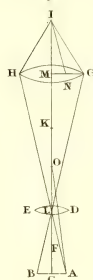


Fig. 10.

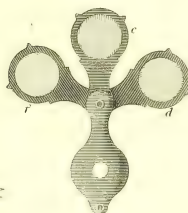


Fig. 9.

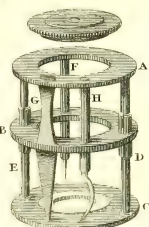


Fig. 8.

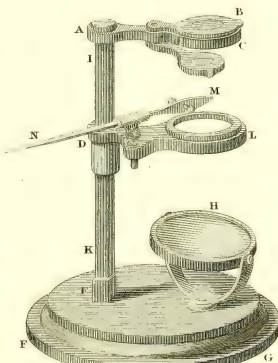
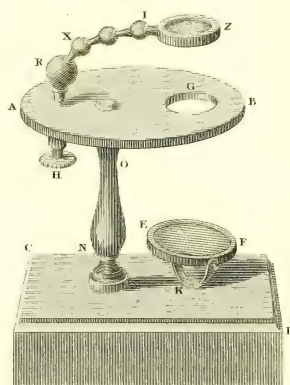
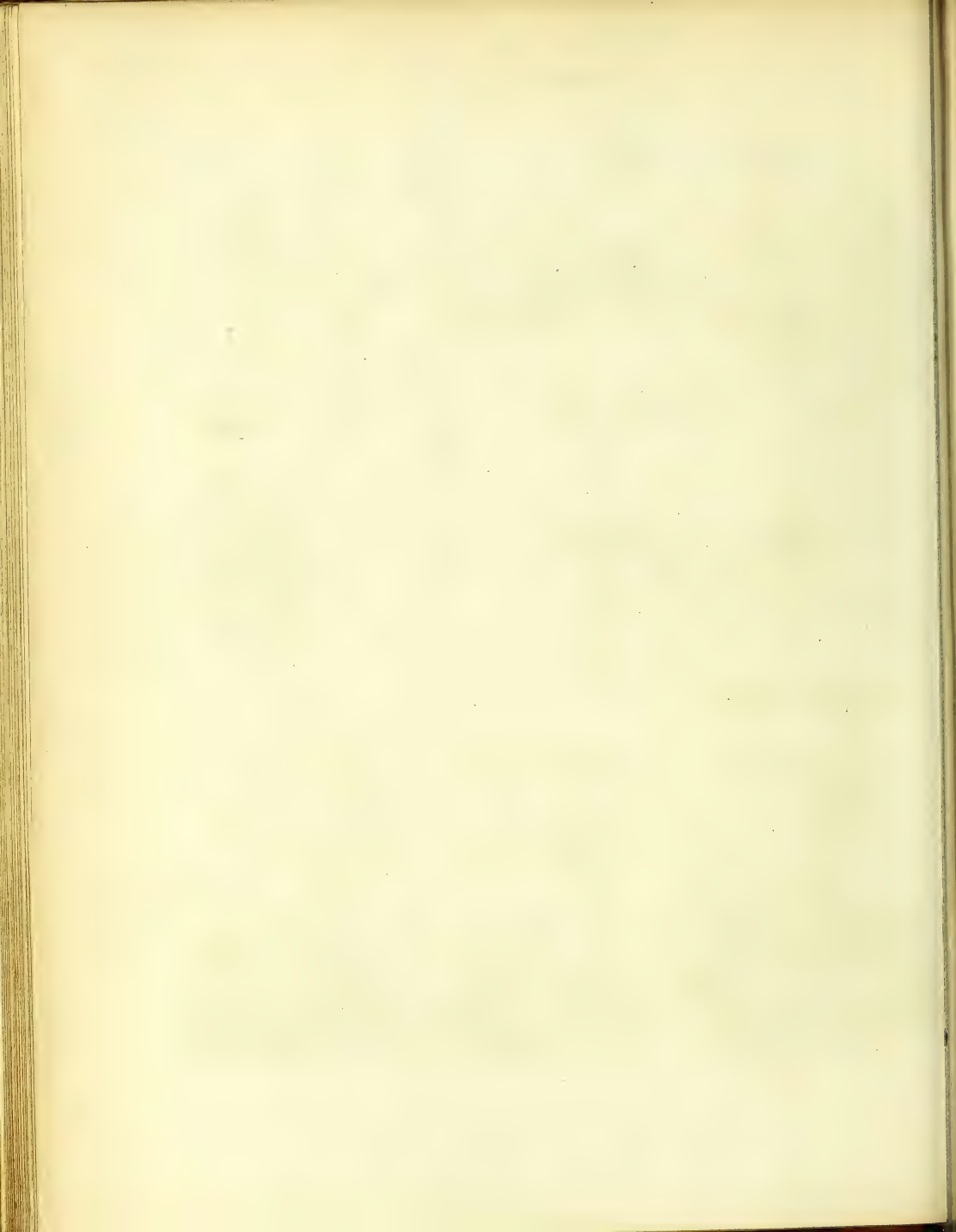


Fig. 11.





Marshall's

Fig. 1.

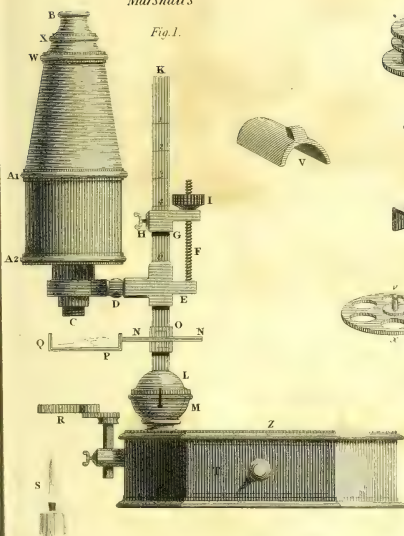
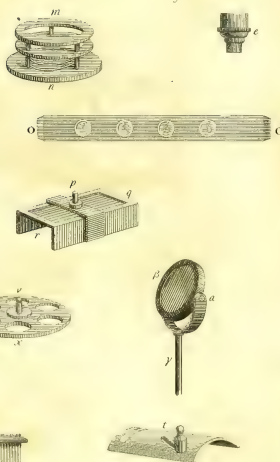


Fig. 2.



Culpepper's

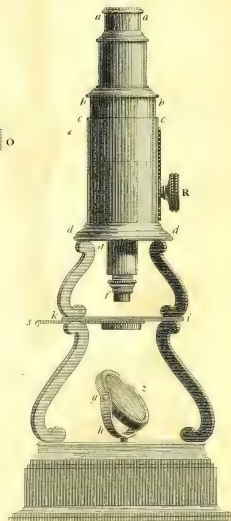


Fig. 1.

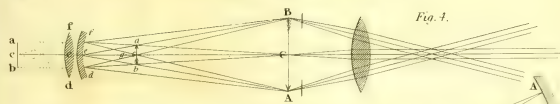


Fig. 3.

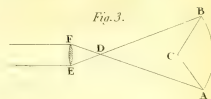
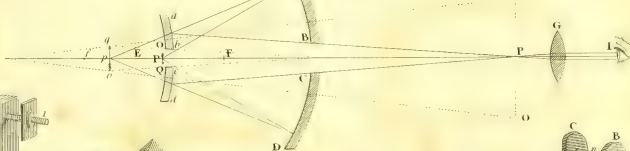


Fig. 5.



Solar Microscope

Fig. 6.

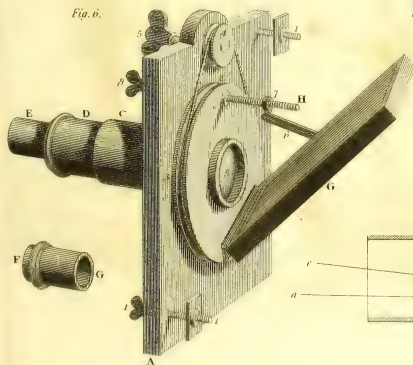


Fig. 8.

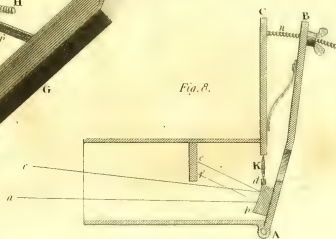
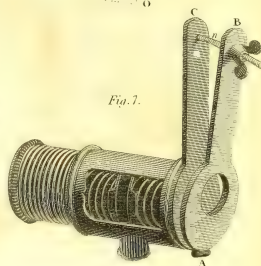


Fig. 7.

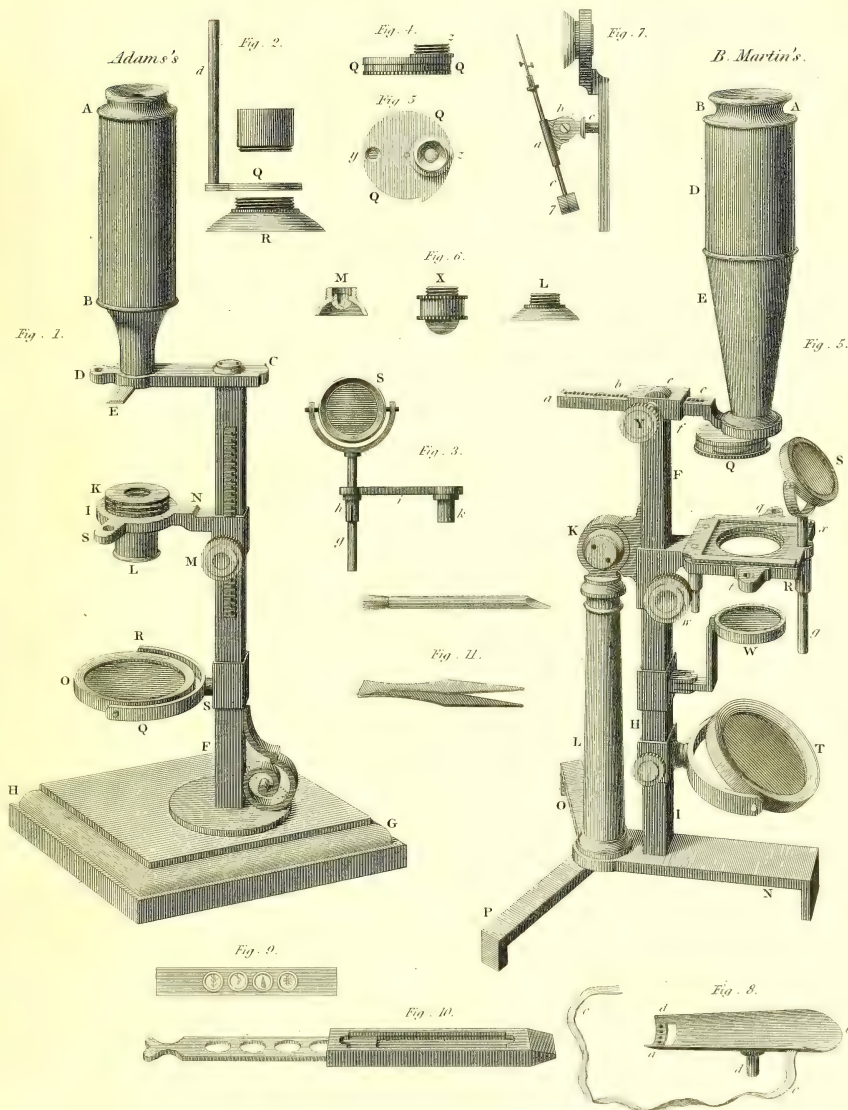


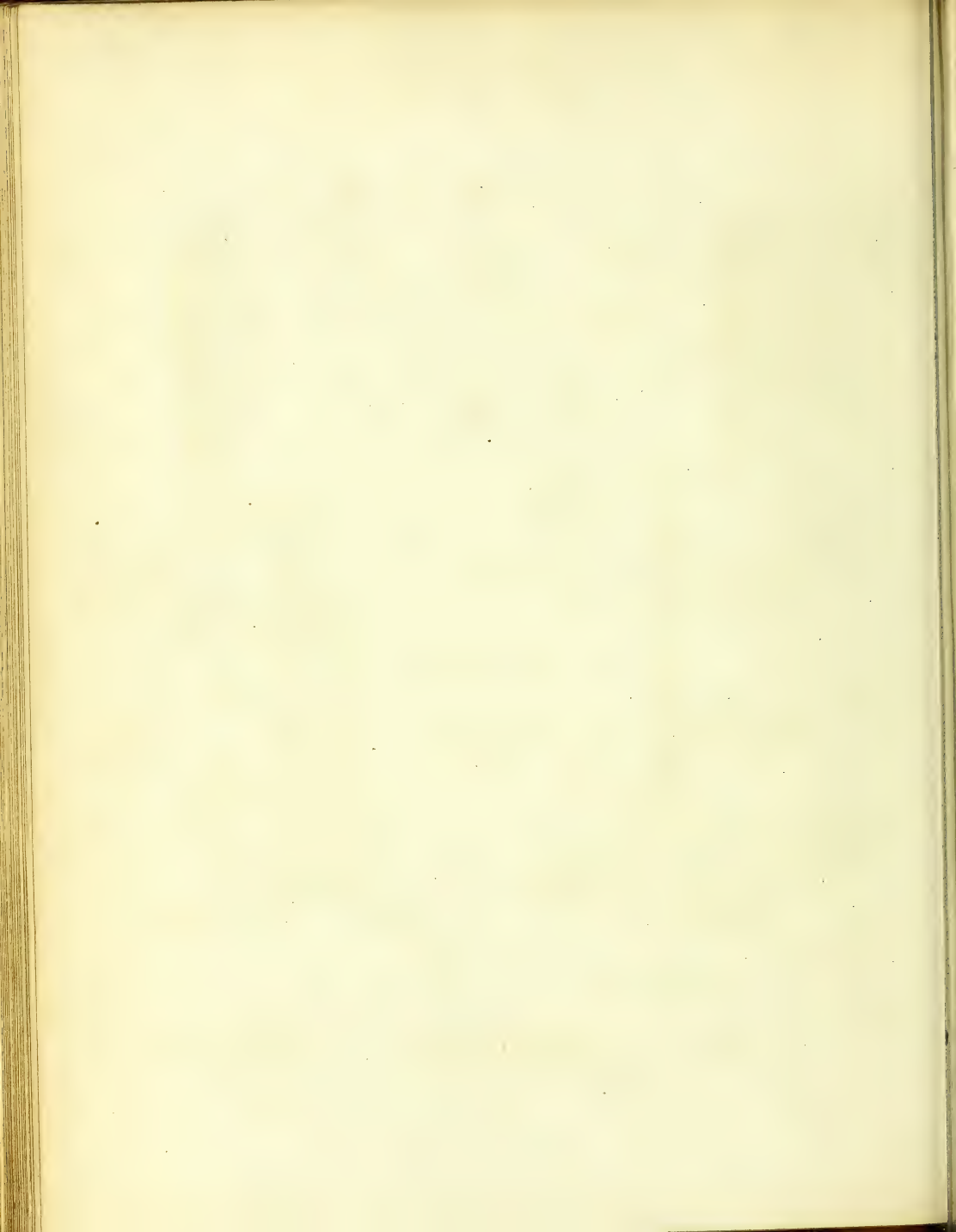




*Compound MICROSCOPE.*

PLATE XIV.





# OPTICS. MIRROR.

PLATE XV.

Fig. 1.

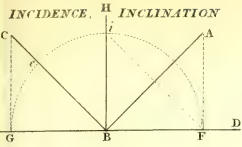


Fig. 2.

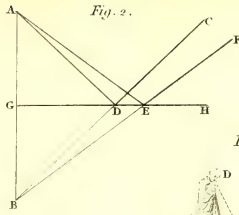


Fig. 3.

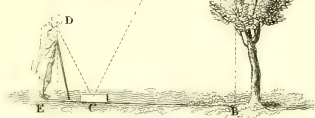


Fig. 4.

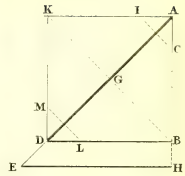


Fig. 5.

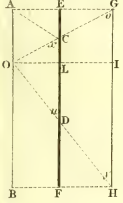


Fig. 6.

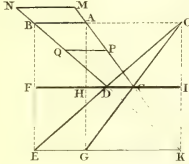


Fig. 7.

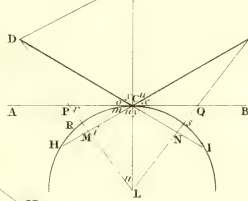


Fig. 8.

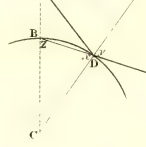


Fig. 10.

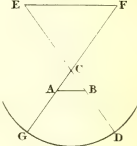


Fig. 9.

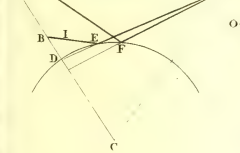


Fig. 10.

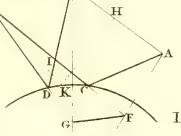


Fig. 14.

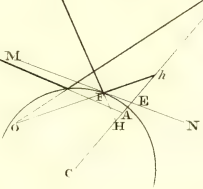


Fig. 13.

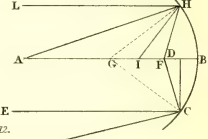


Fig. 11. & 12.

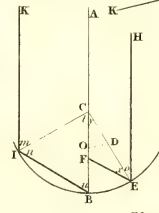
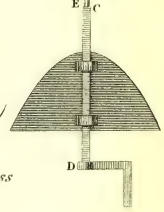


Fig. 18.



OPERA Glass  
p a q

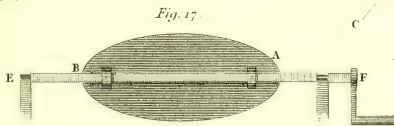


Fig. 17.

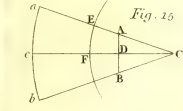


Fig. 15.

MUSCÆ Volitantes. Centering OBJECT Glass.

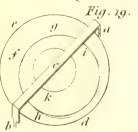


Fig. 19.

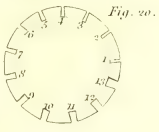


Fig. 20.

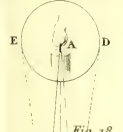


Fig. 18.

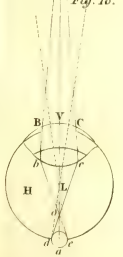


Fig. 23.

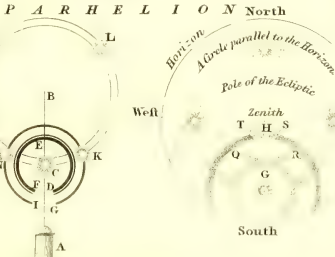


Fig. 21.

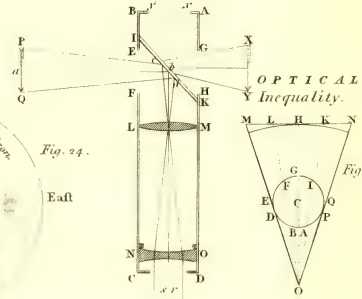
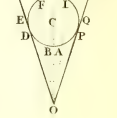
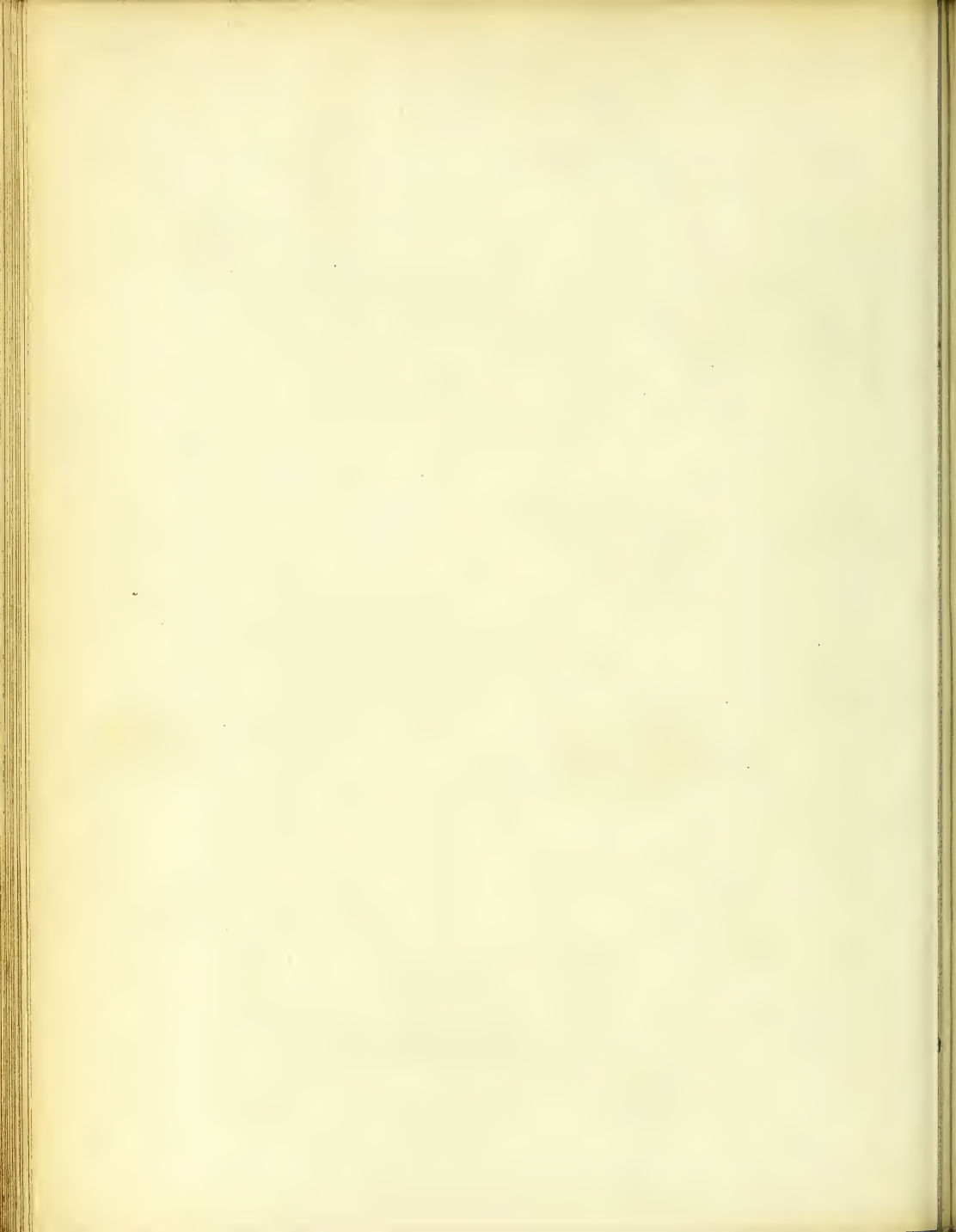


Fig. 24.

Fig. 22.

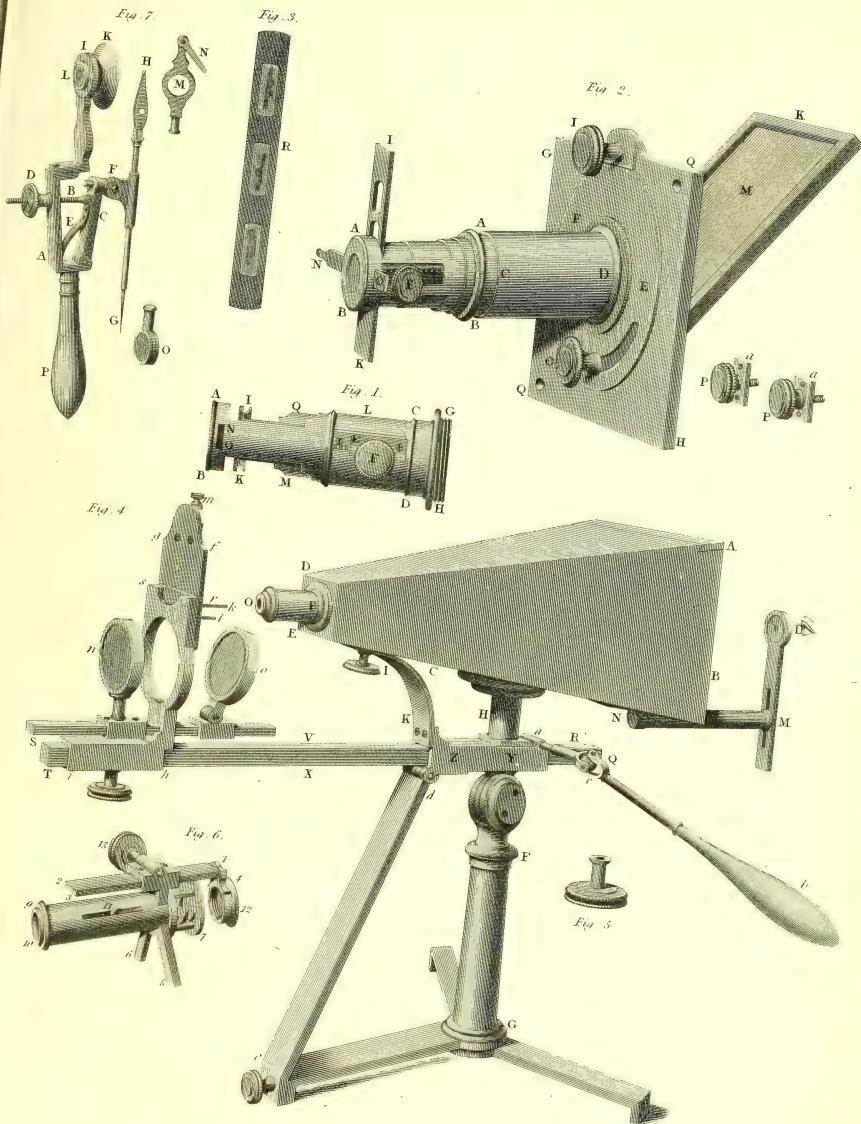






# OPTICS.

PLATE IV.



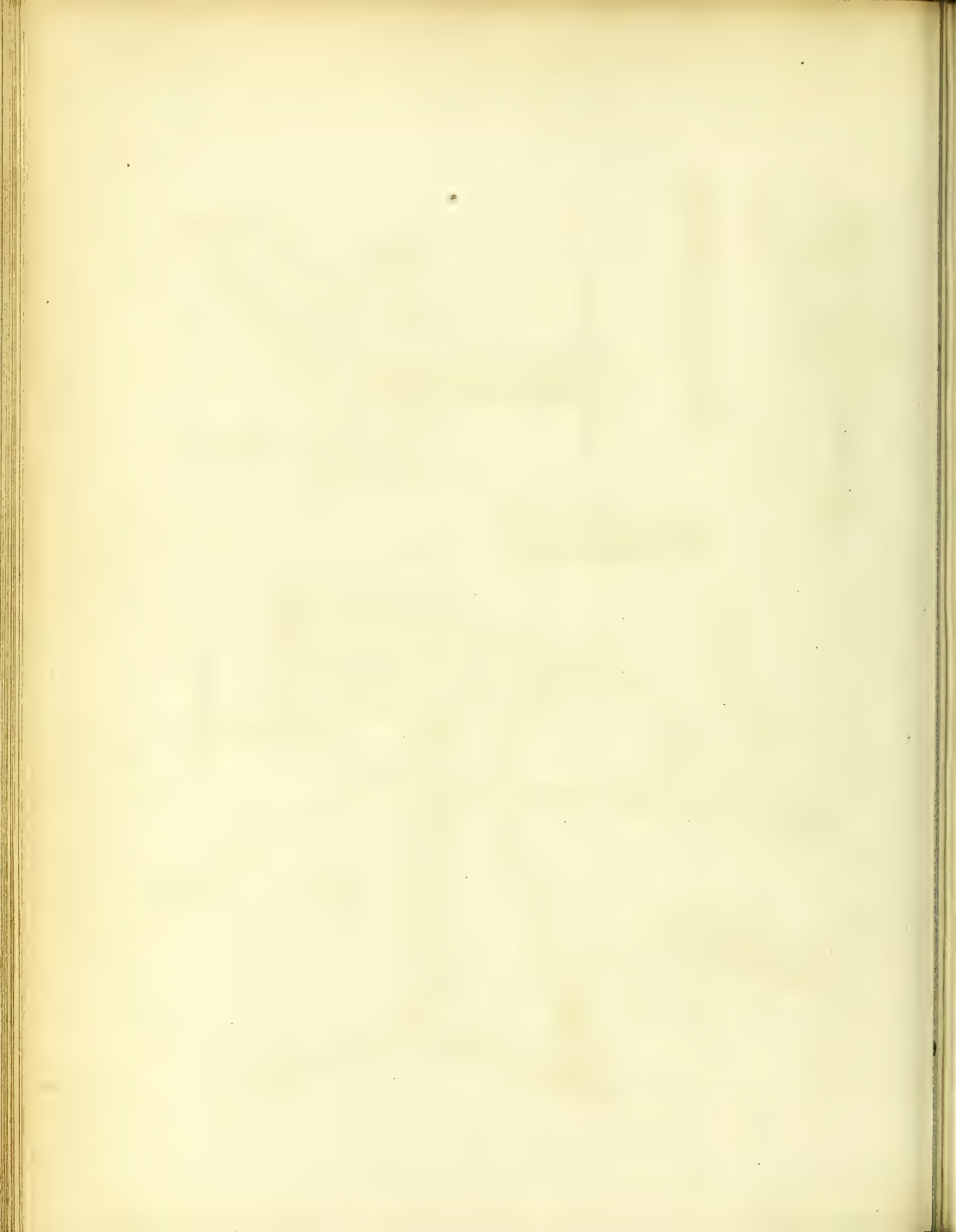


Fig. 5.



Fig. 1.

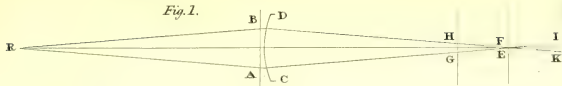


Fig. 2.

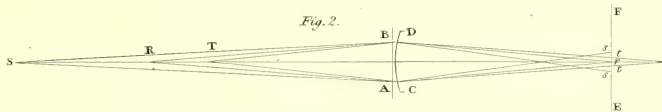


Fig. 3.

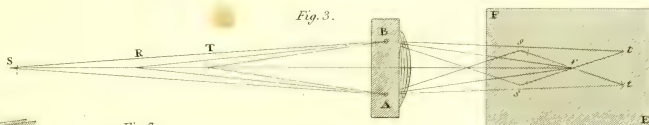


Fig. 7.

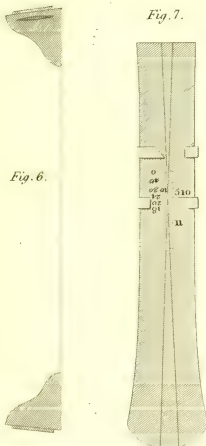


Fig. 6.

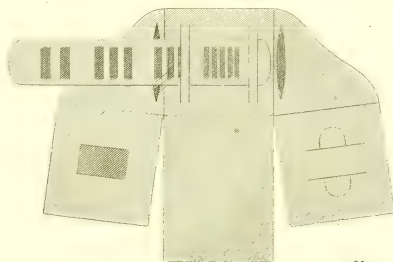


Fig. 4.

Fig. 11.

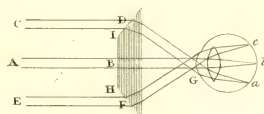


Fig. 9.

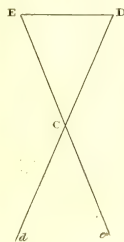


Fig. 13.

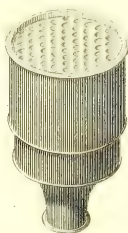


Fig. 10.

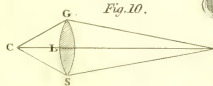


Fig. 12.

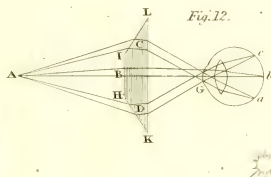


Fig. 15.

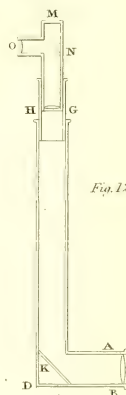
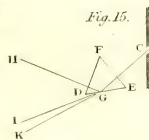
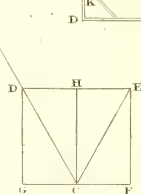
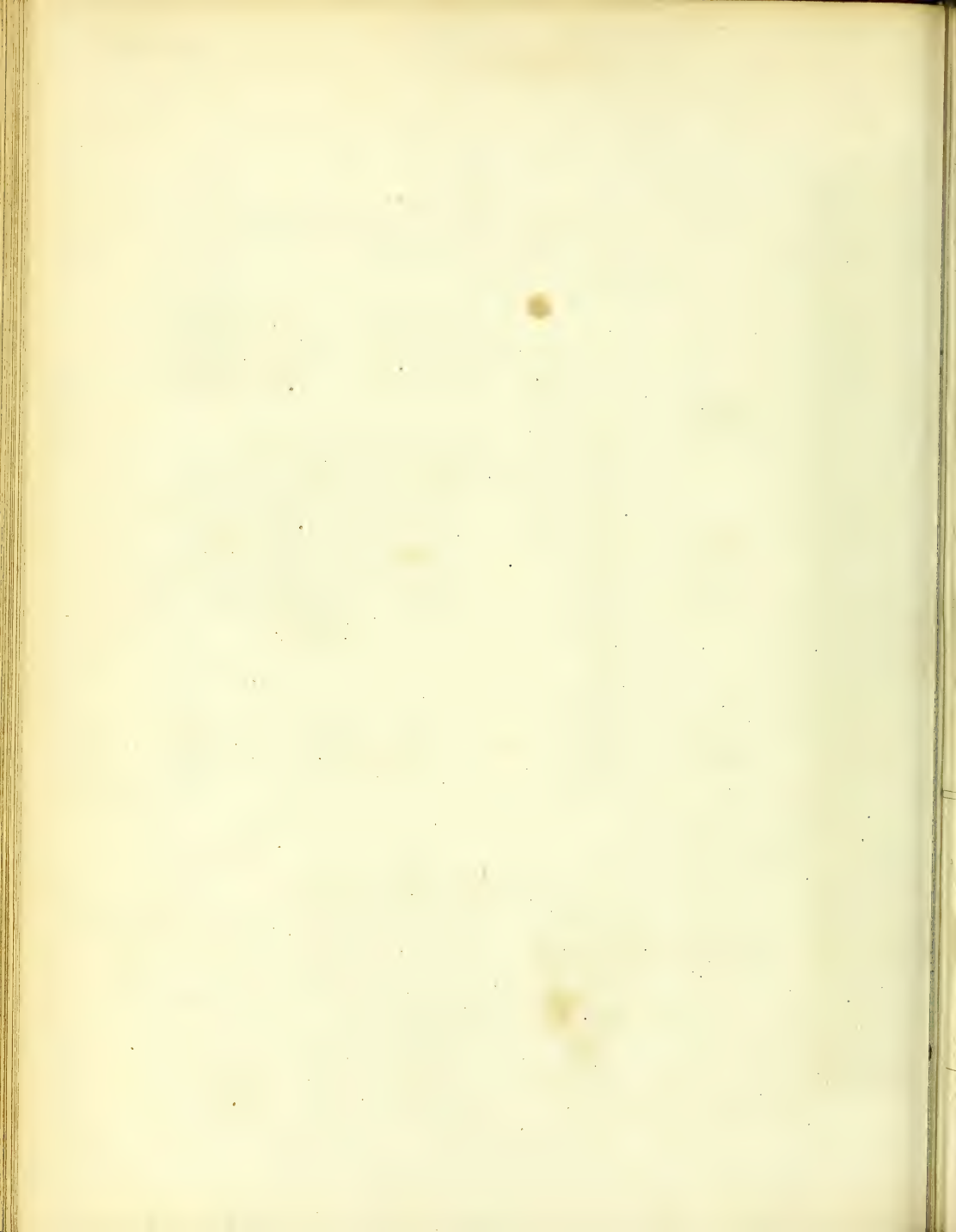


Fig. 12.

Fig. 14.







*RAINBOW, REFRACTION.*

**R** *Fig. 1.*

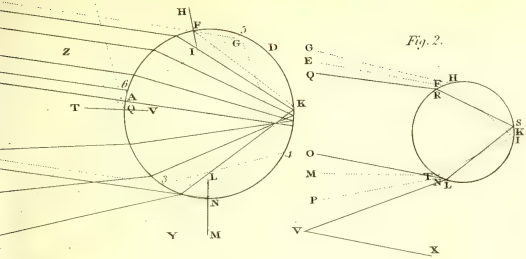
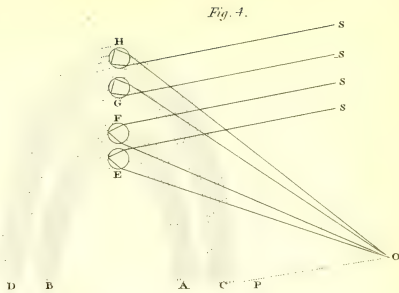


Fig. 2.



*Fig. 4.*

*Fig. 6.*

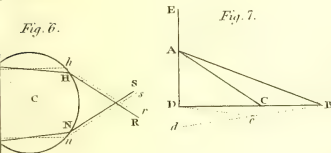
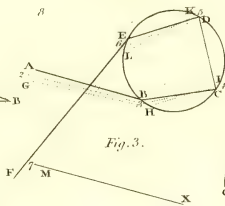
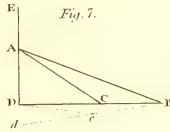
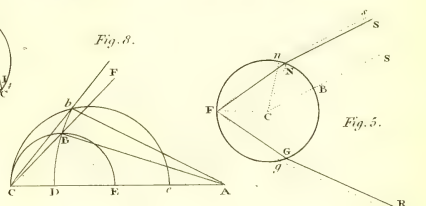


Fig. 7.



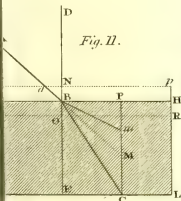
*Fig. 3.*



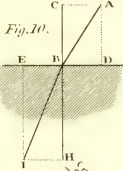
*Fig. 8*

*Fig. 5.*

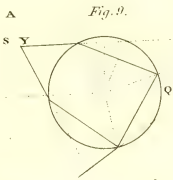
*Fig. 11.*



*Fig. 10.*



*Fig. 9.*



*Fig. 12.*

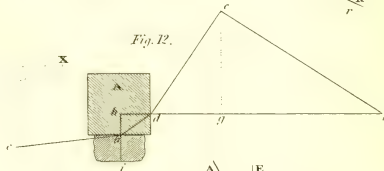
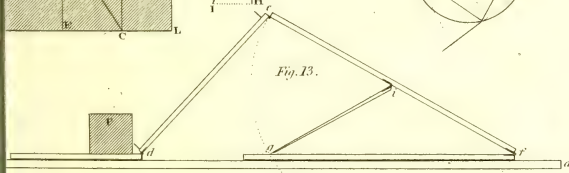


Fig. 13



*Fig. 16.*

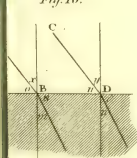


Fig. 17

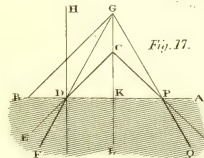
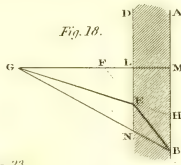
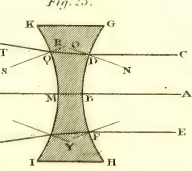


Fig. 18



*Fig. 23*



*Fig. 22.*

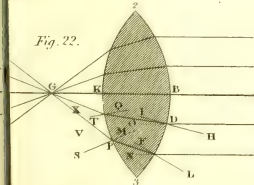


Fig. 19

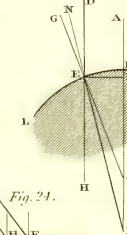
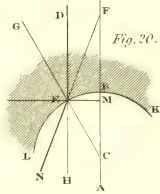
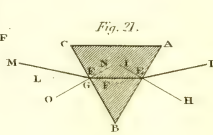
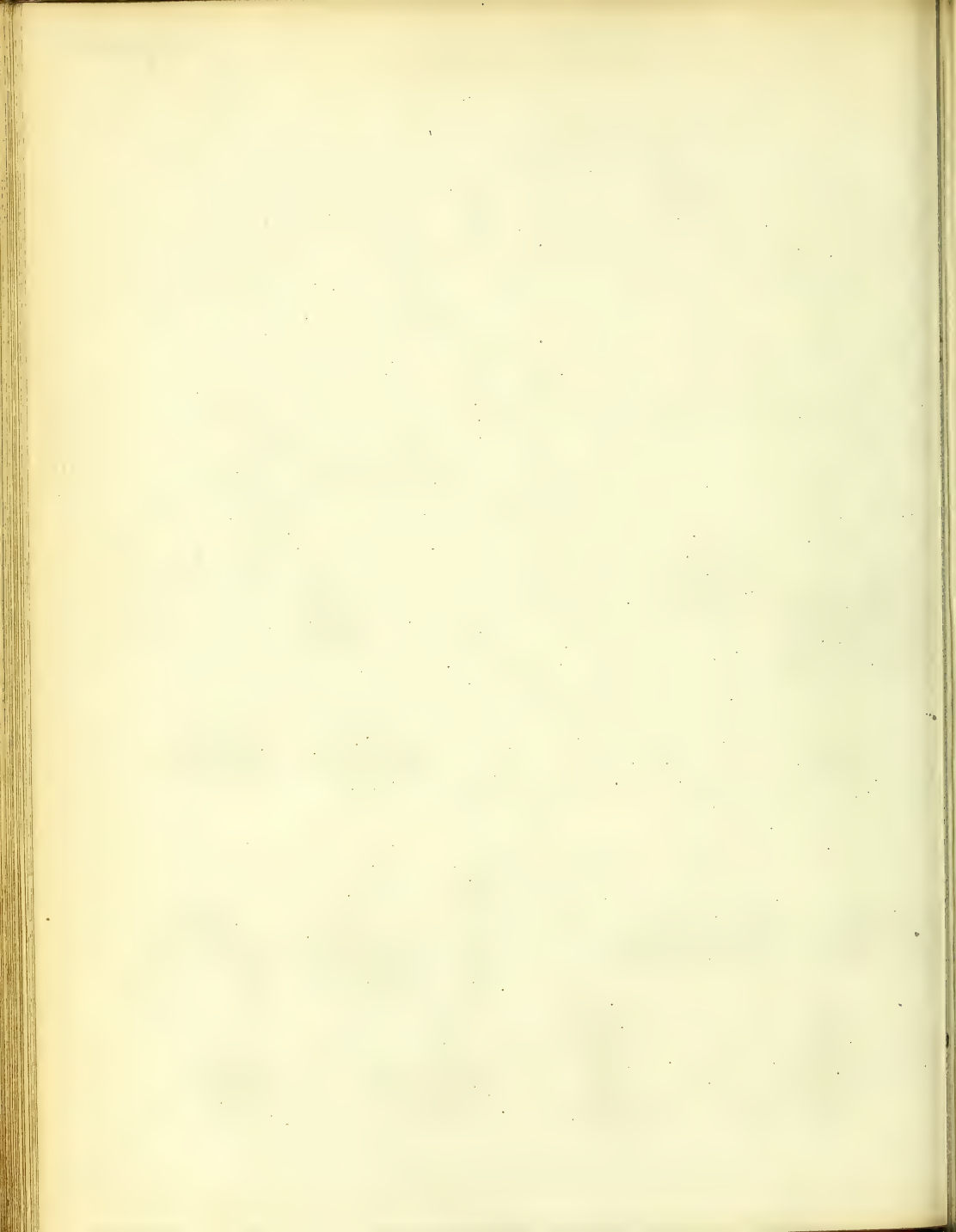


Fig. 20

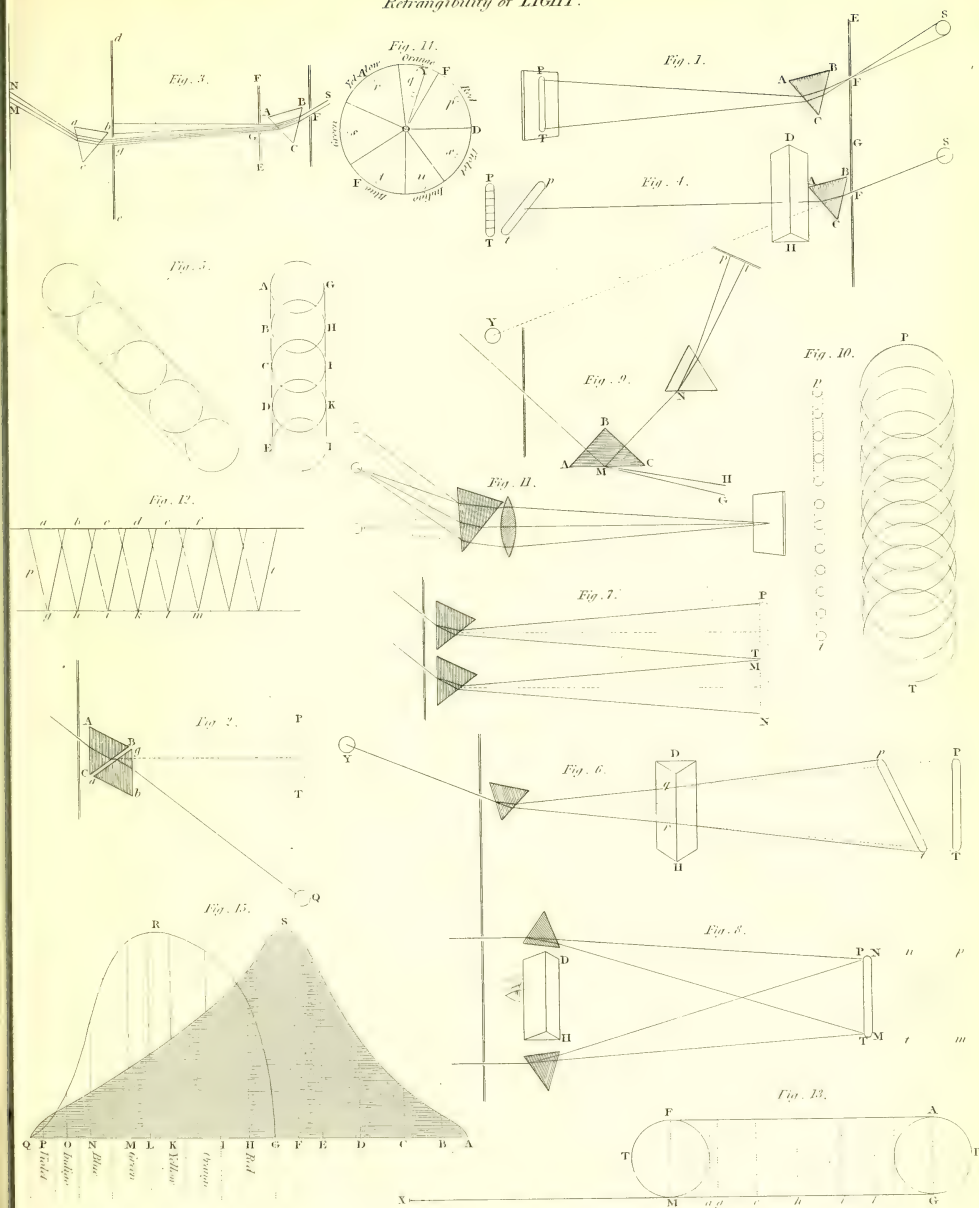


*Fig. 21.*

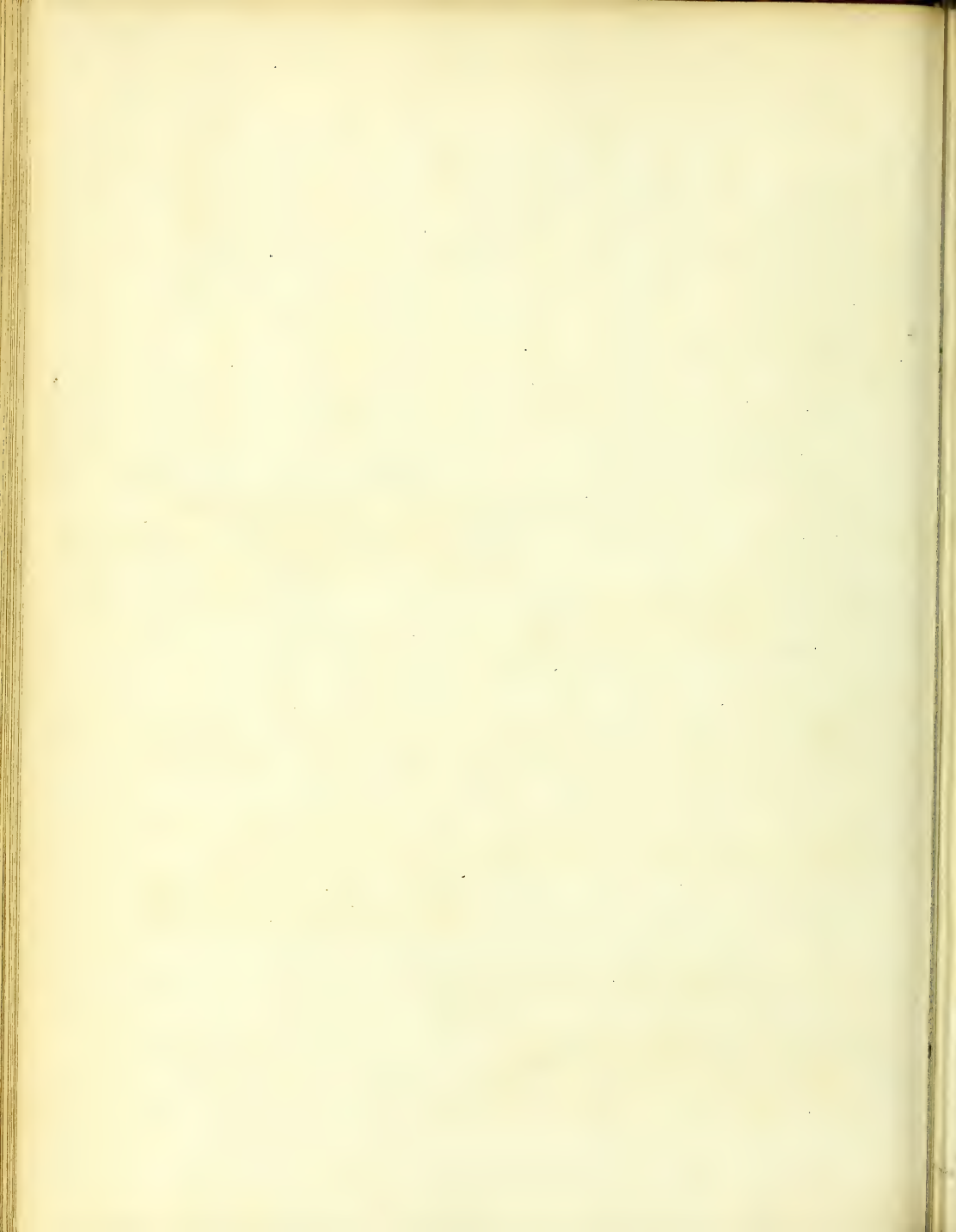




## Refrangibility of LIGHT.







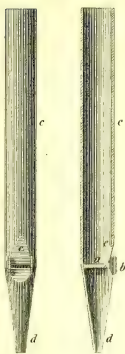
ORGAN.

*PLATE I.*

*Fig. 1. & 2.*



*Fig. 3. & 4.*



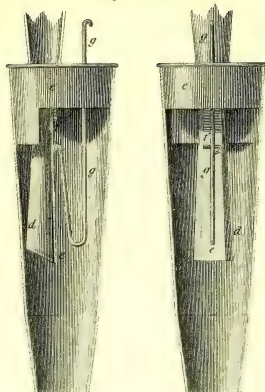
*Fig. 5. & 6.*



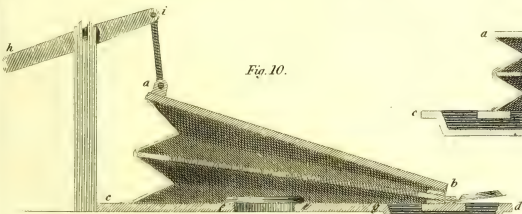
*Fig. 7.*



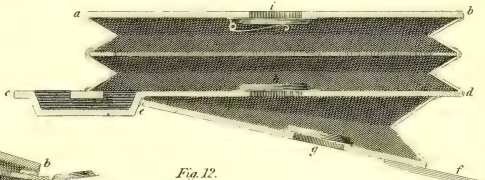
*Fig. 8. & 9.*



*Fig. 10.*



*Fig. 11.*



*Fig. 12.*  
*Sesqui<sup>r</sup>.*

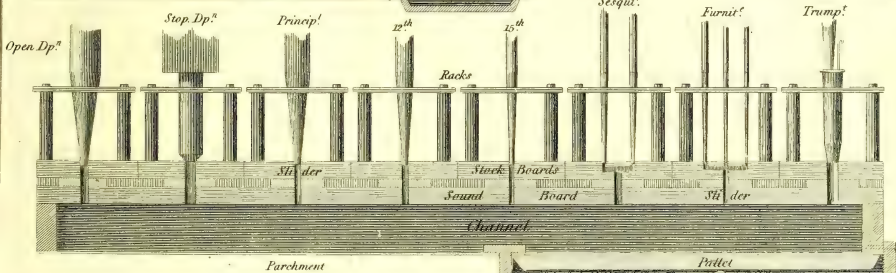
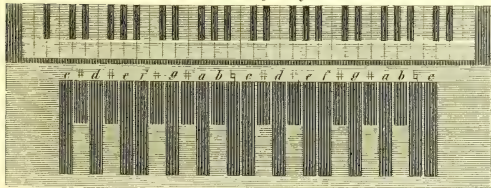


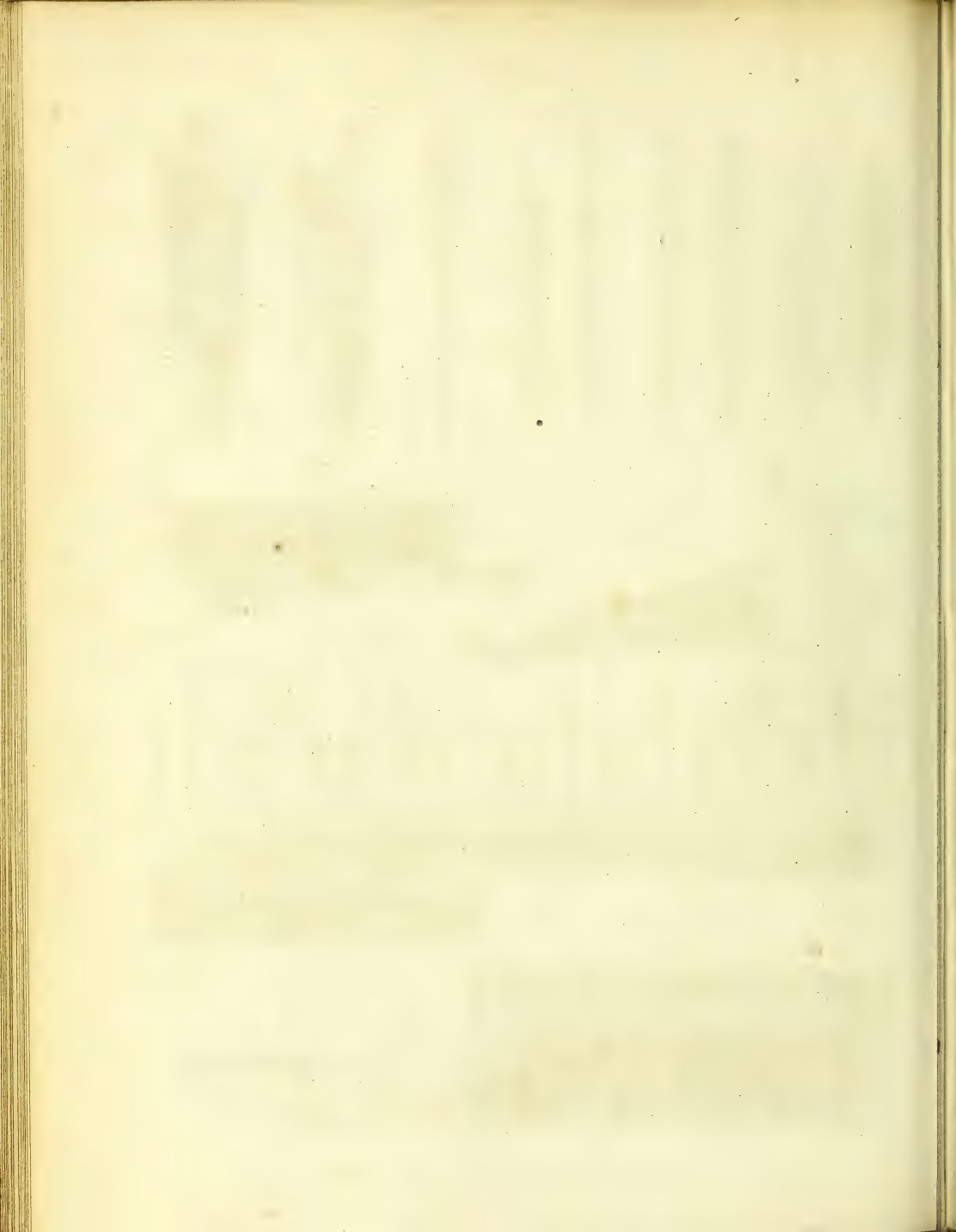
Fig. 13.

*Relative position of the finger keys & Pedals.*



*Pull & Down*

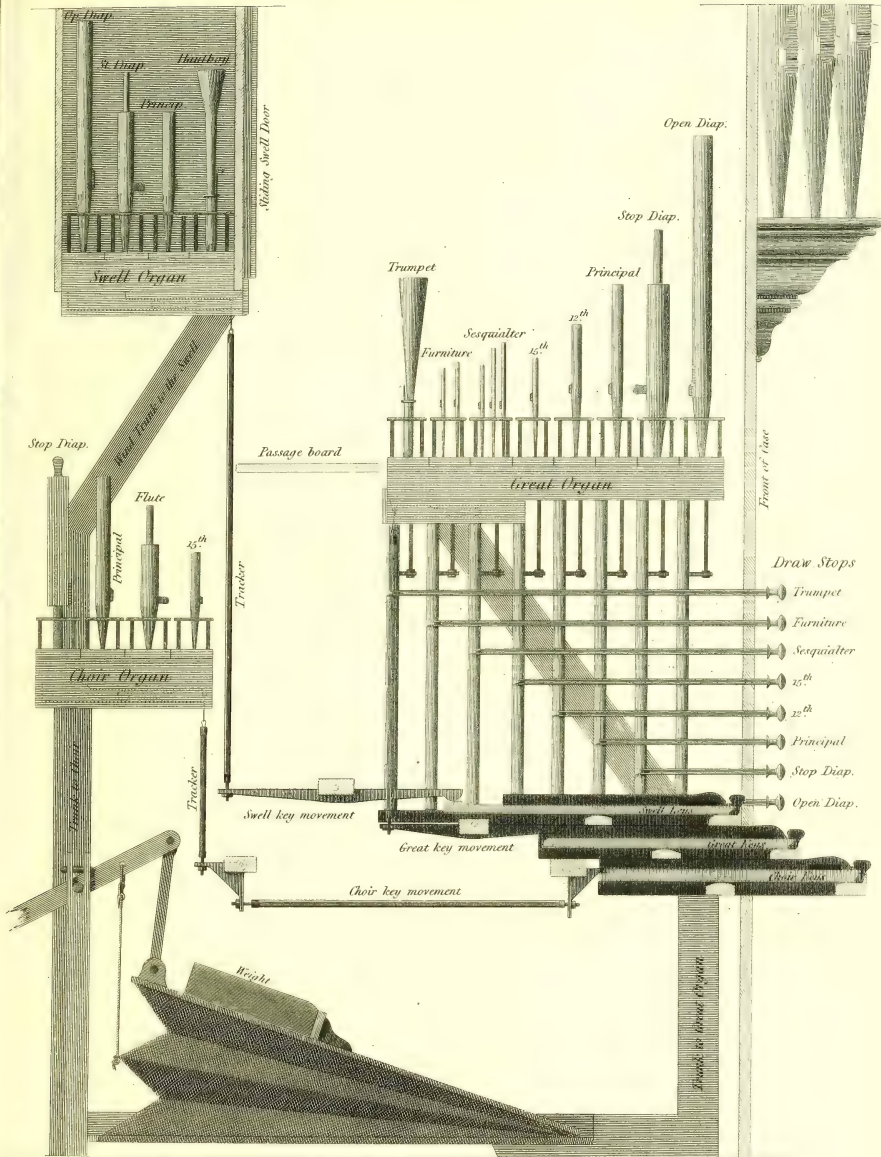




# ORGAN.

PLATE II.

Interior Profile of an English Church ORGAN.





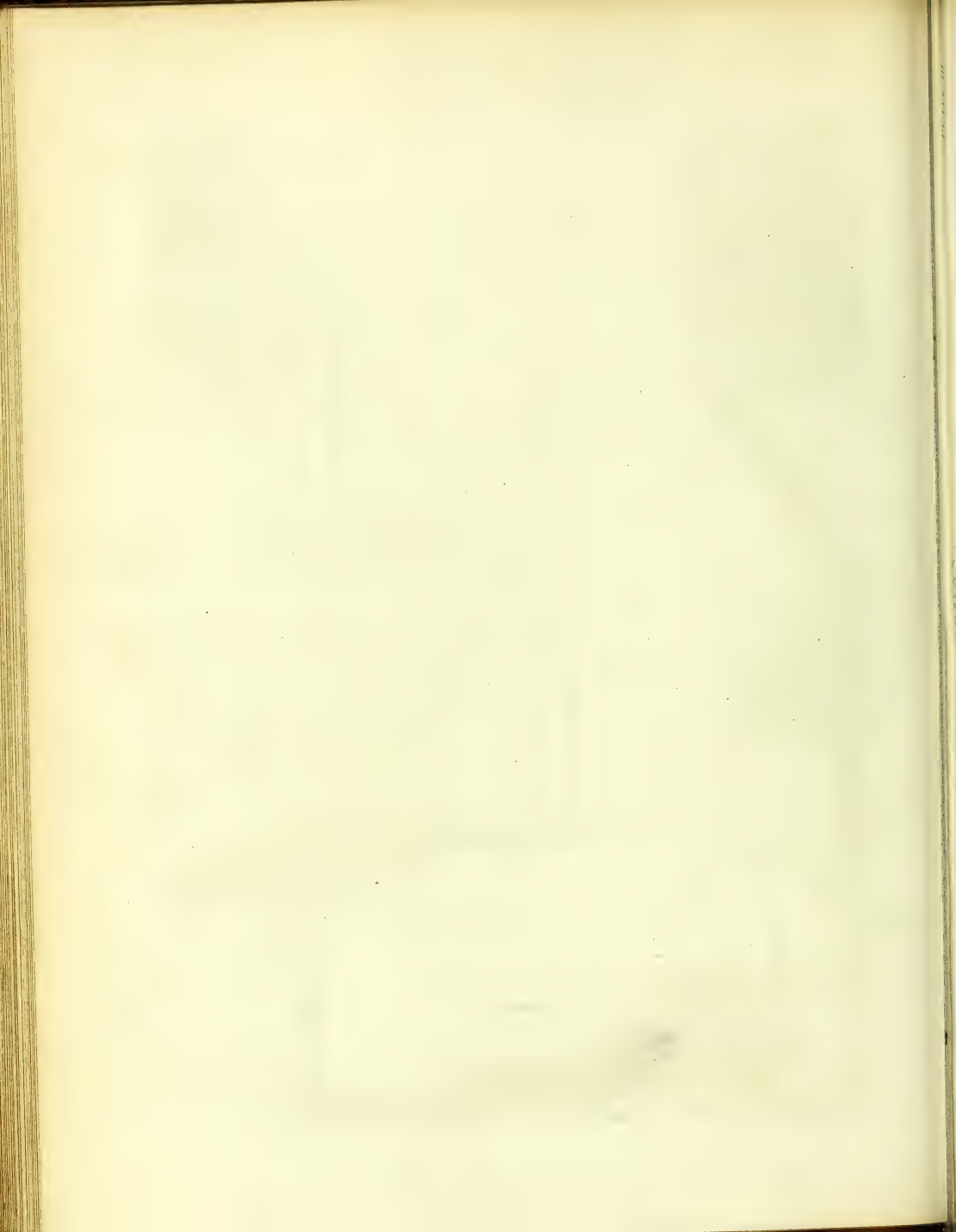


Fig. 3.

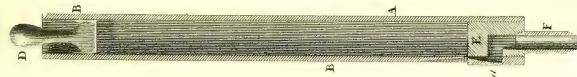


Fig. 4.



Fig. 5.

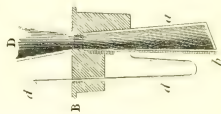


Fig. 1.

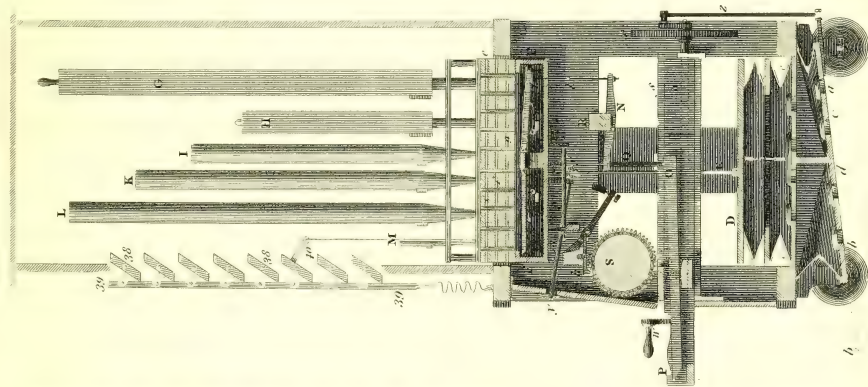
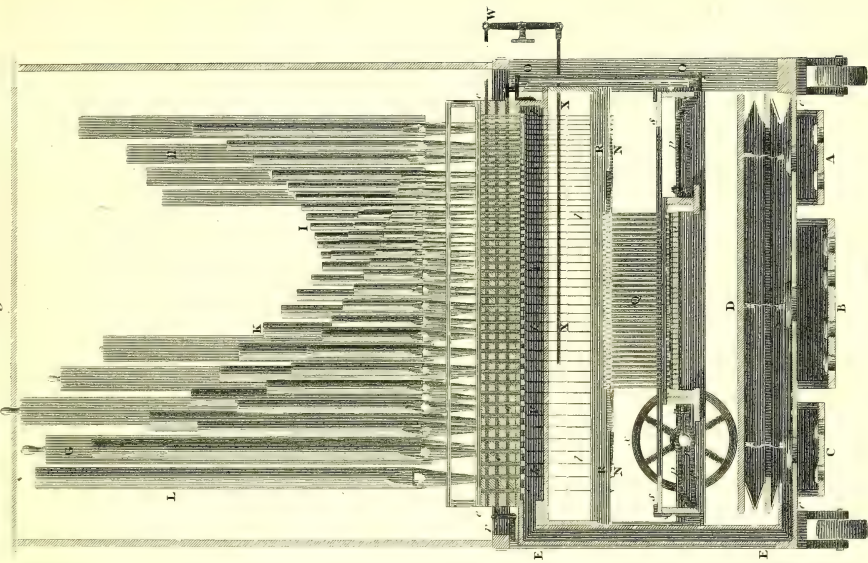
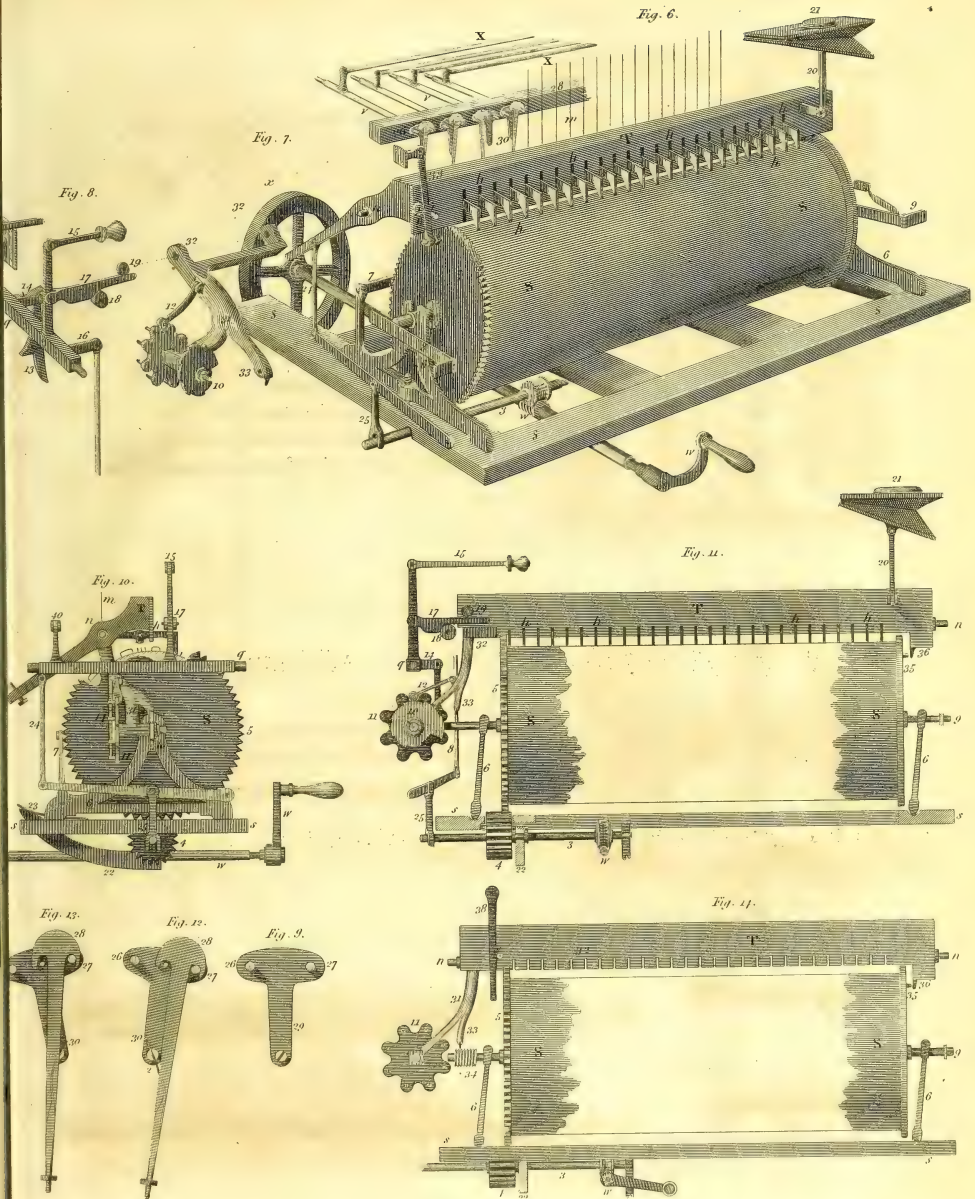


Fig. 2.











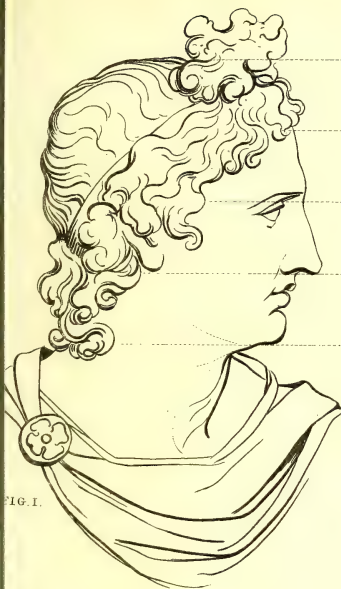


FIG. 1.

*Apollo Belvedere*



FIG. 2.

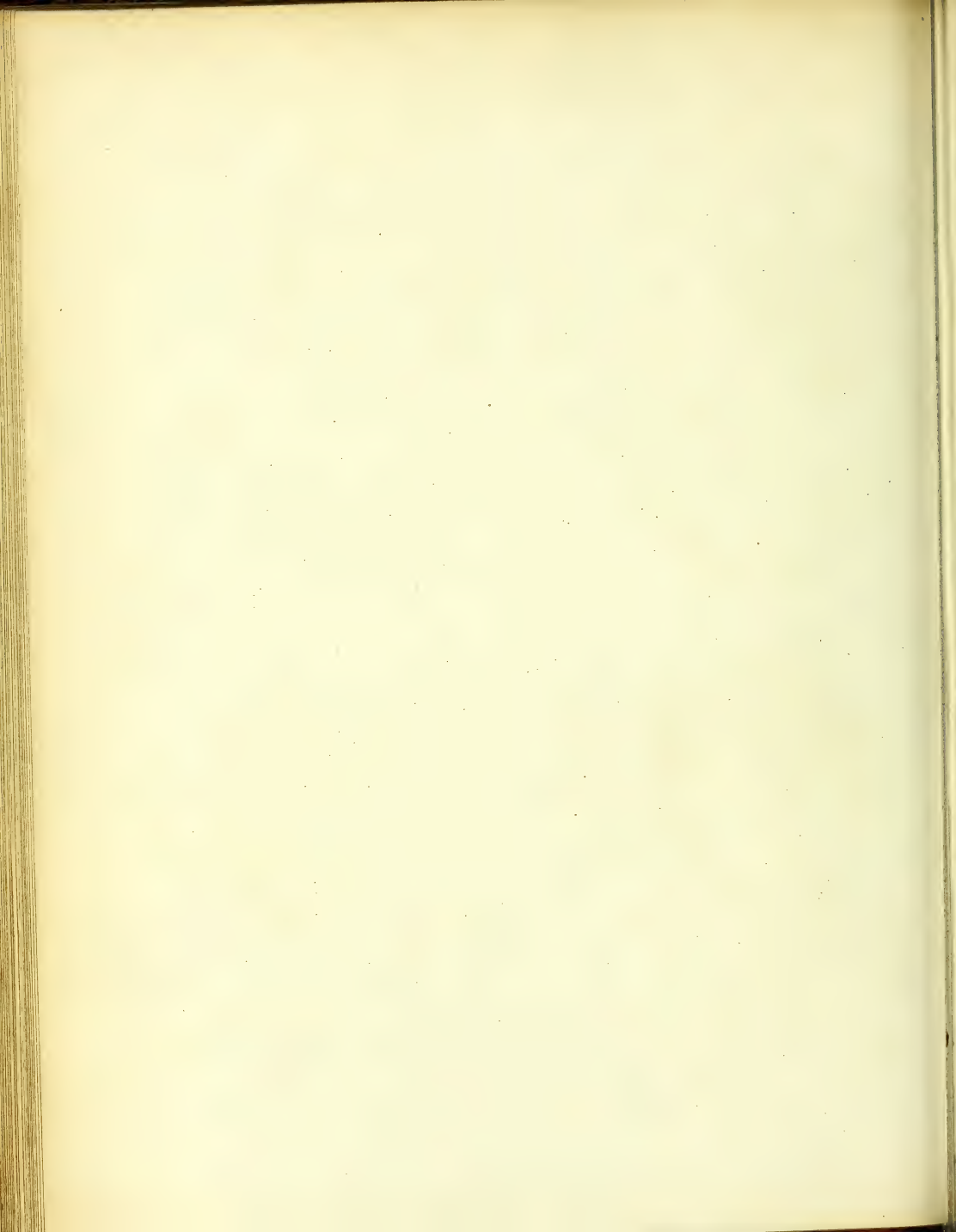


FIG. 3.

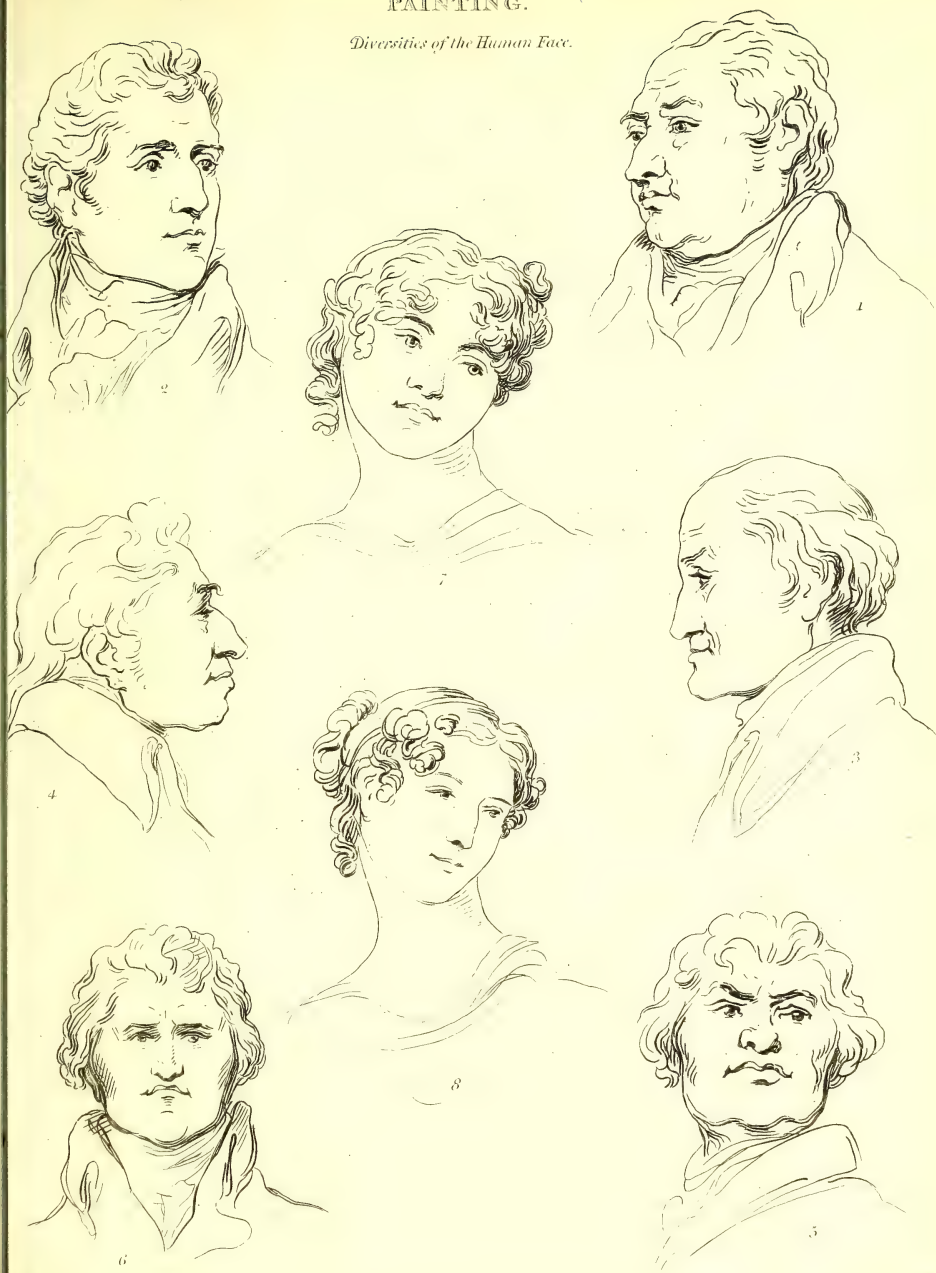
*Venus de Medici*



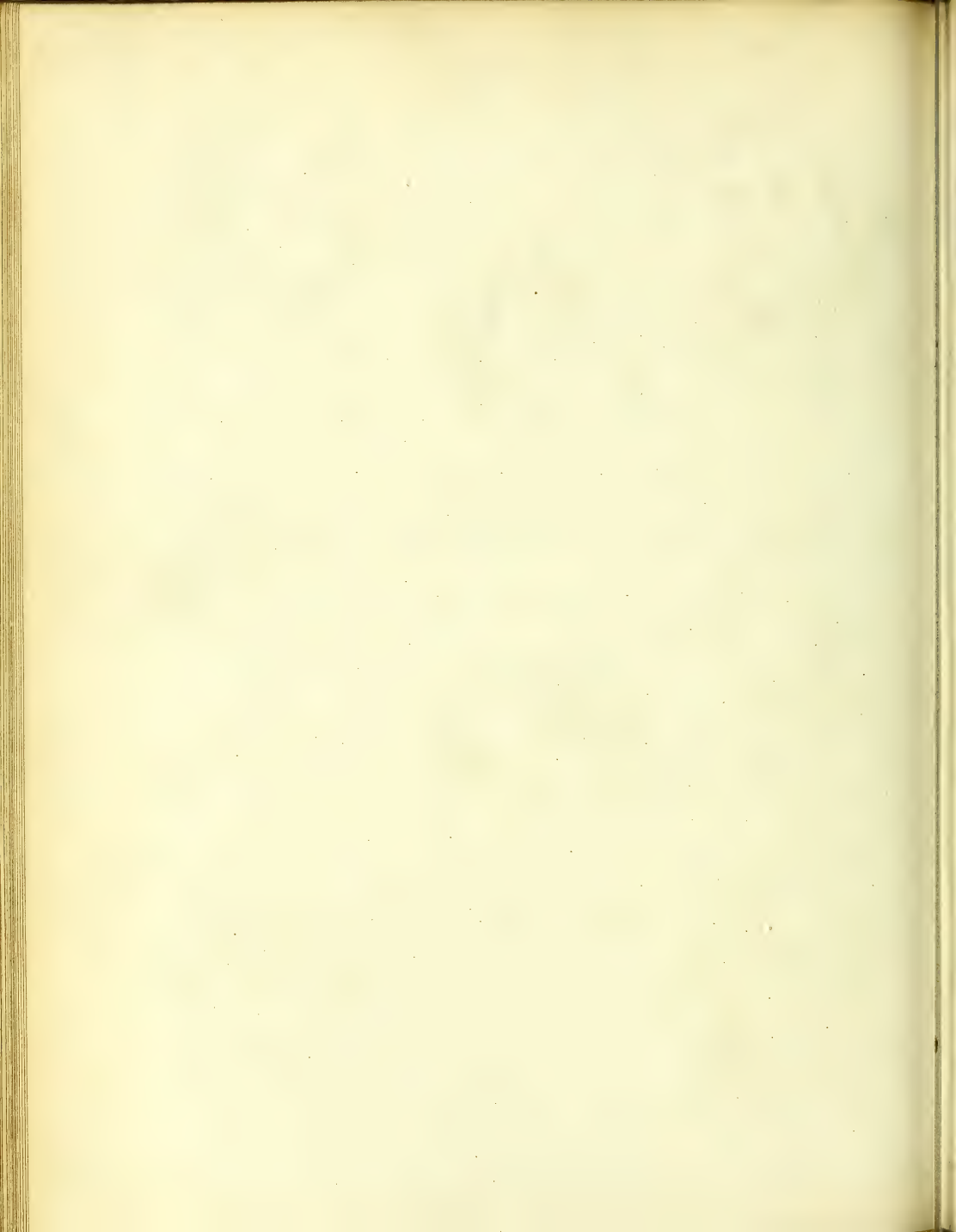
FIG. 4.

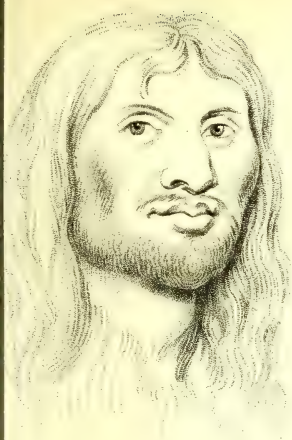


*Diversities of the Human Face.*









*American  
Nootka Sound*



*European*



*Asiatic  
Palestine*



*Asiatic  
Chinese*



*African  
Hottentot*



Fig. 2. N<sup>o</sup> 1.

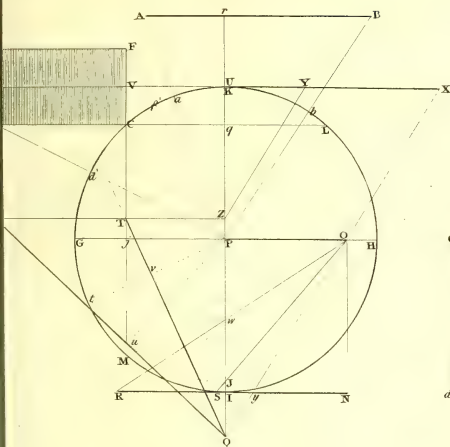


Fig. 1.

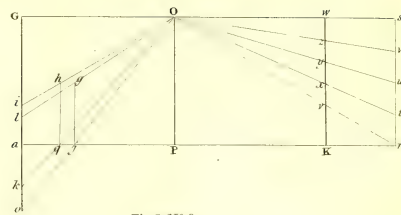
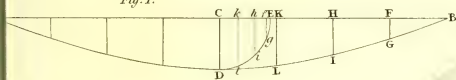


Fig. 2. N<sup>o</sup> 2.

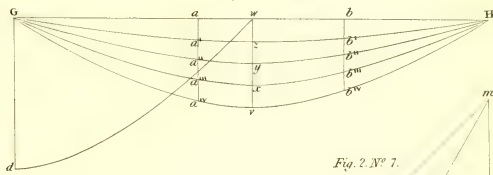


Fig. 2. N<sup>o</sup> 7.

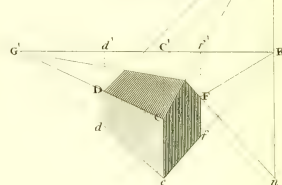


Fig. 3.

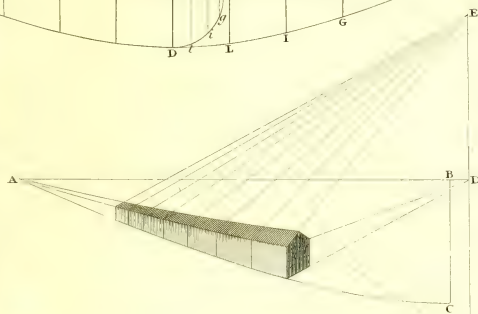


Fig. 2. N<sup>o</sup> 6.

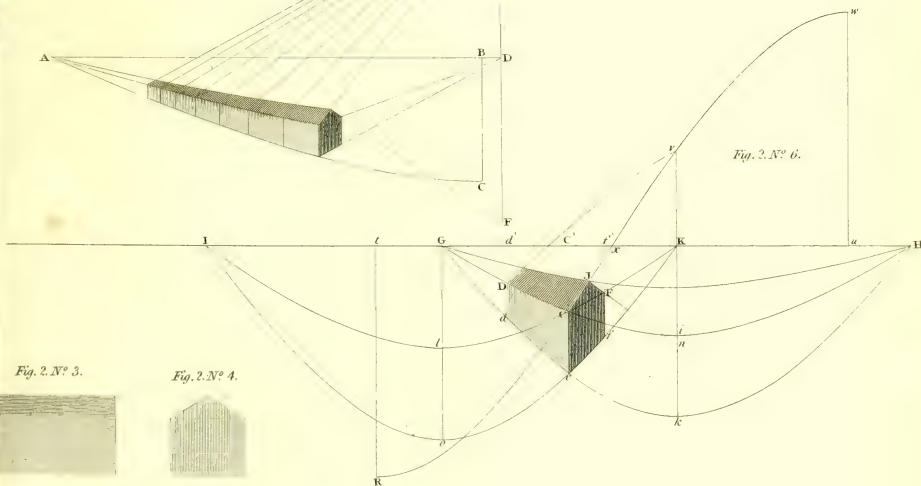


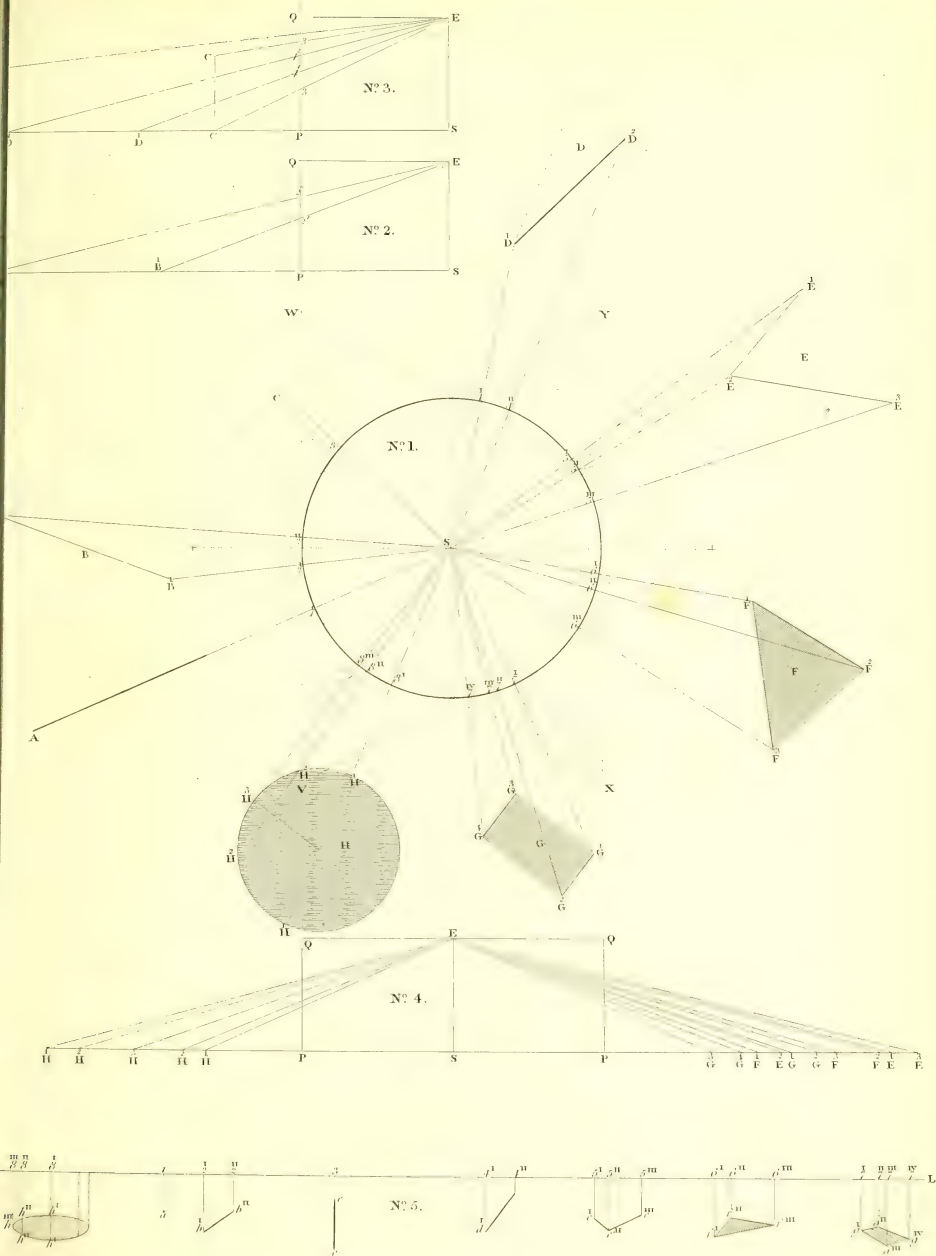
Fig. 2. N<sup>o</sup> 3.

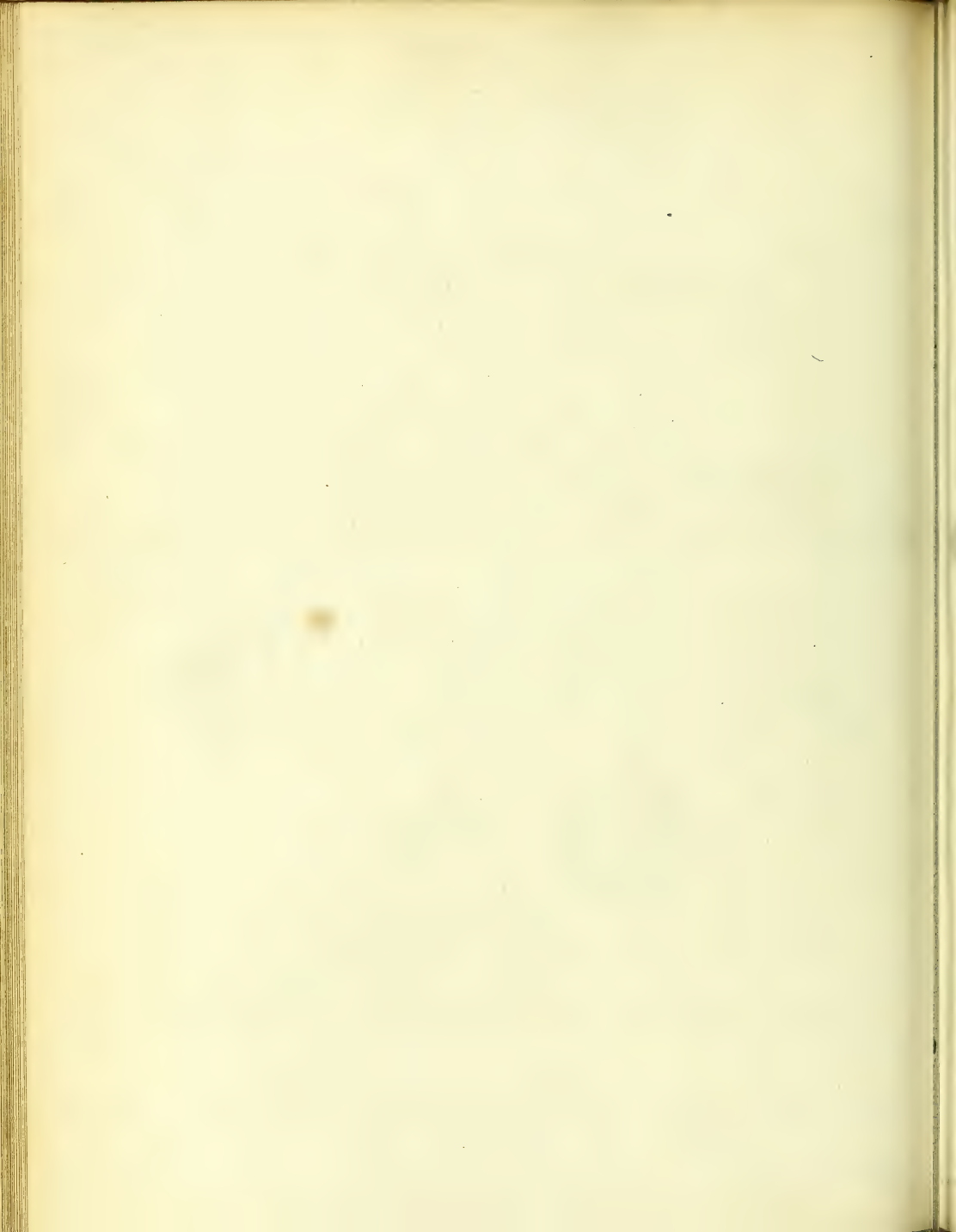
Fig. 2. N<sup>o</sup> 4.



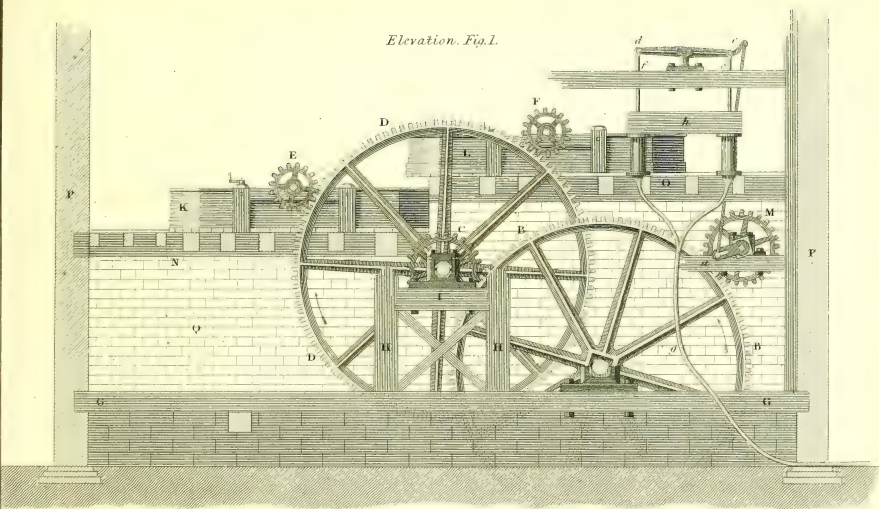
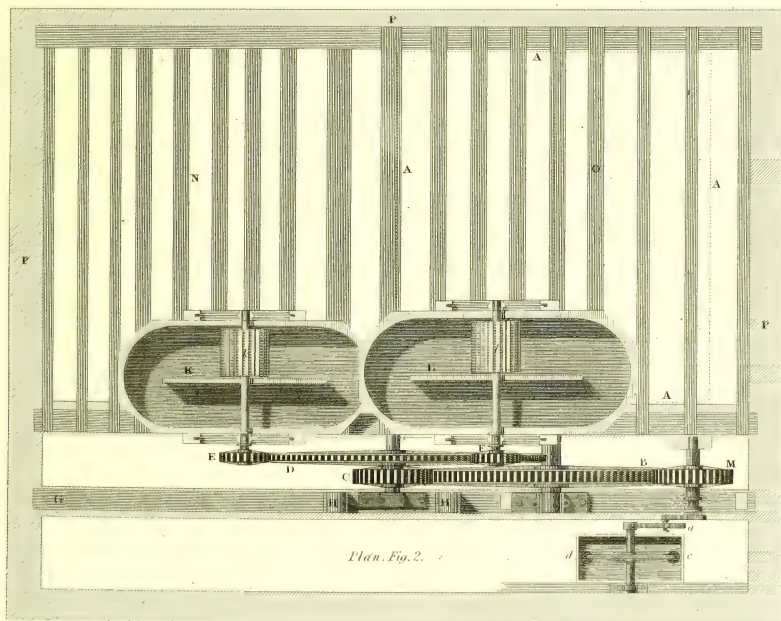




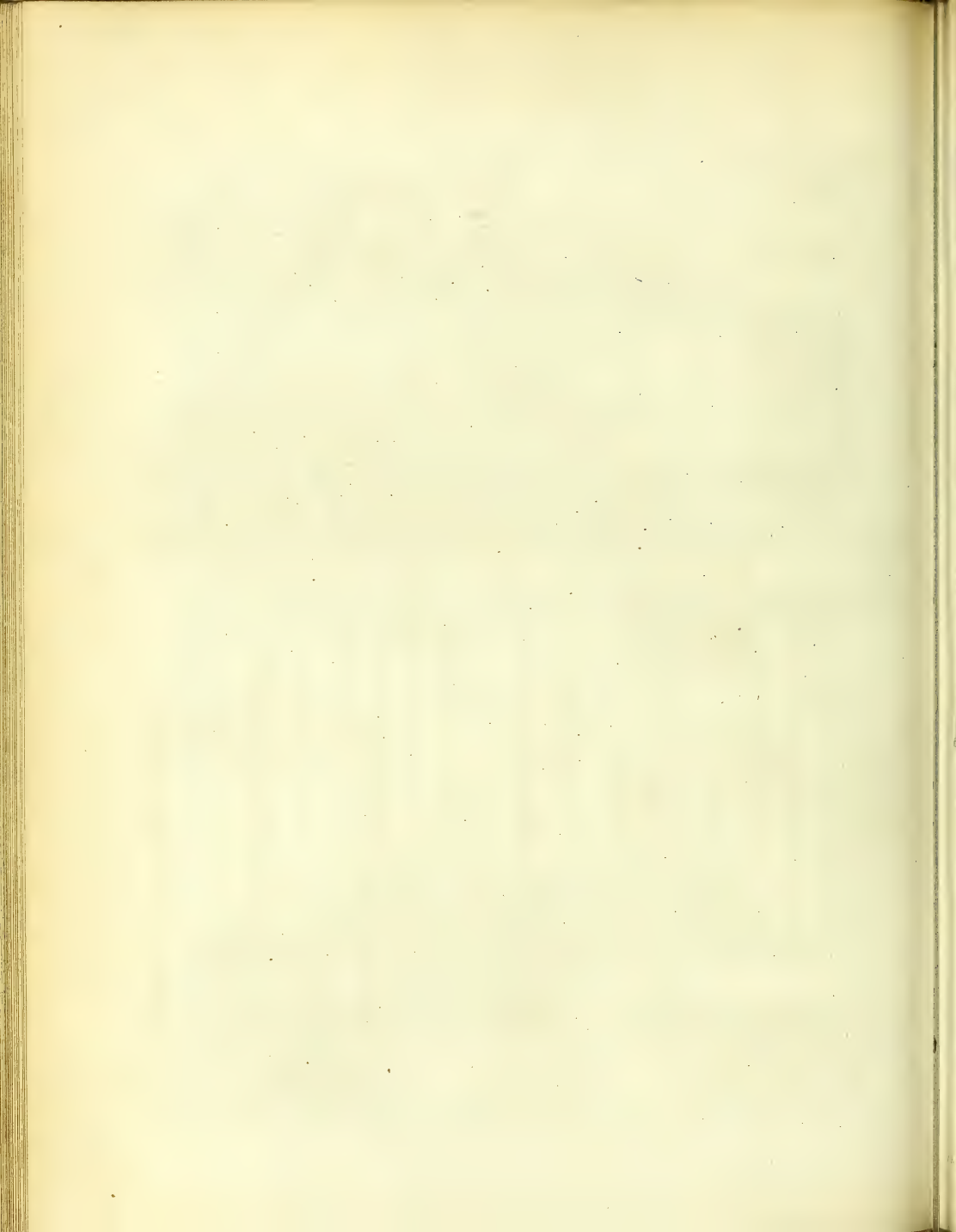




## PAPER MILL.

*Elevation. Fig. 1.**Plan. Fig. 2.*

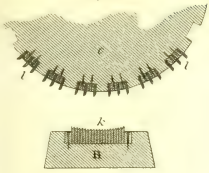




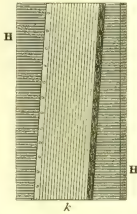
## PAPER MILL

PLATE II.

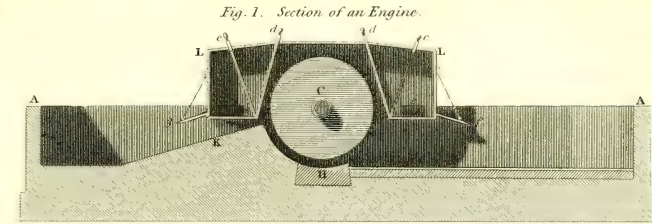
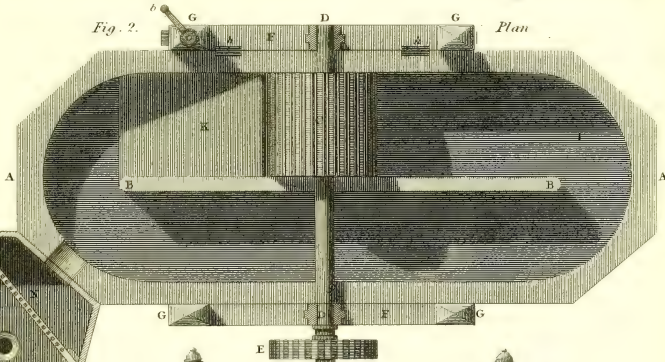
*Fig. 5.*



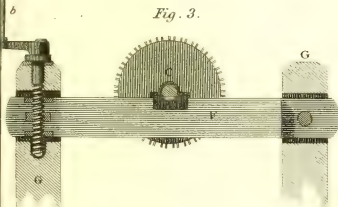
*Fig. 4.*



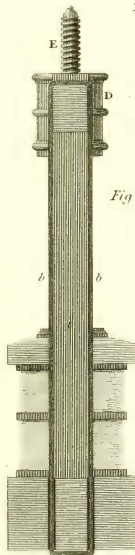
*Fig. 2.*

*Plans*

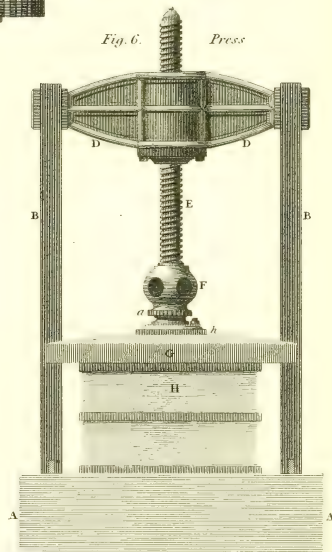
*Fig. 3.*



*Fig. 7.*



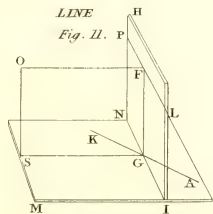
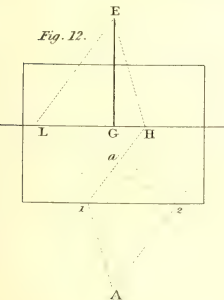
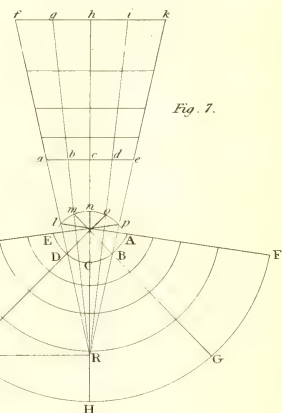
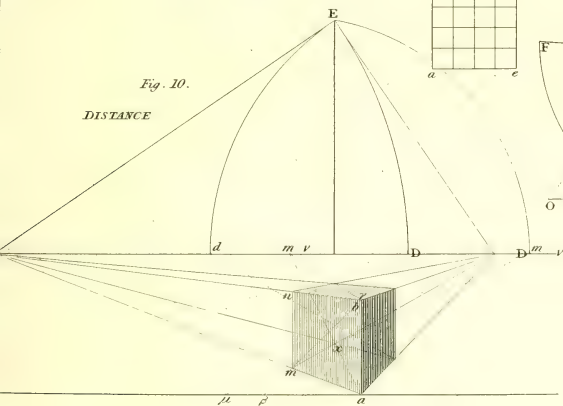
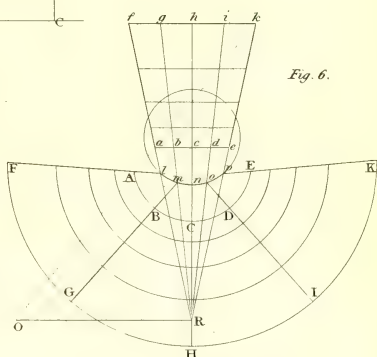
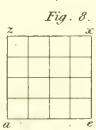
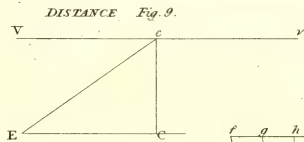
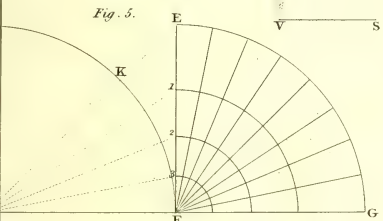
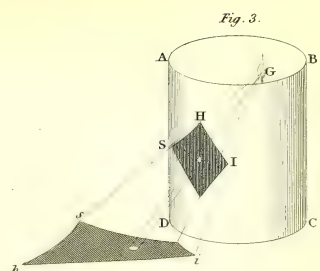
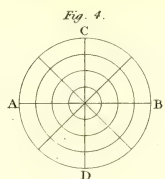
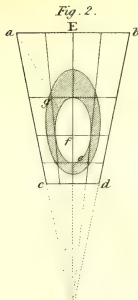
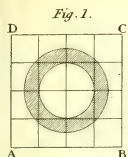
*Fig. 6.*  *Press*





# PERSPECTIVE .

## ANAMORPHOSIS.



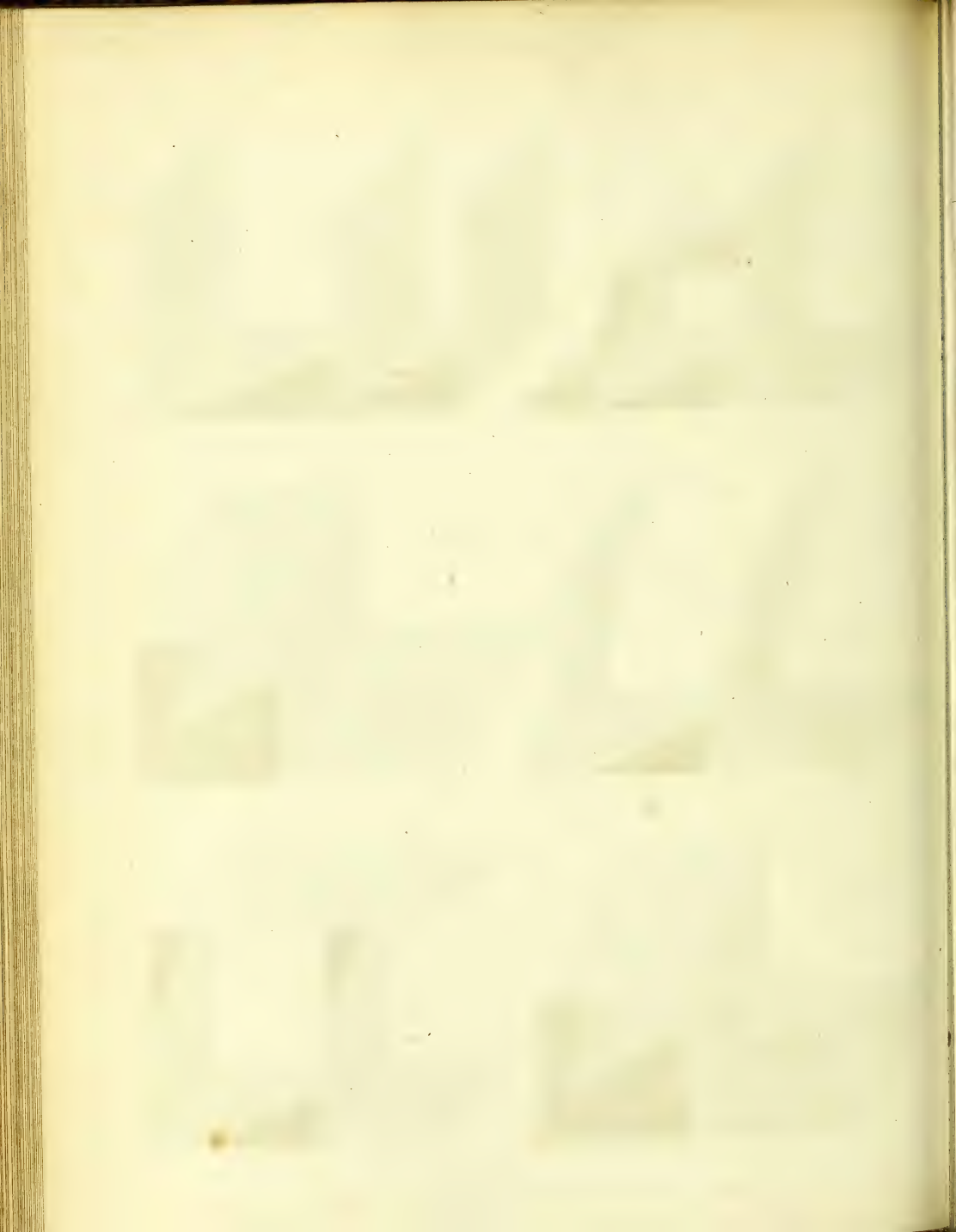




Fig. 2.

Fig. 1.

Fig. 3.

Fig. 4.

Fig. 5.

Fig. 6.

Fig. 7.

Fig. 8.

Fig. 9.

Fig. 10.

Fig. 11.

Fig. 12.

Fig. 13.

Fig. 14.

Fig. 15.

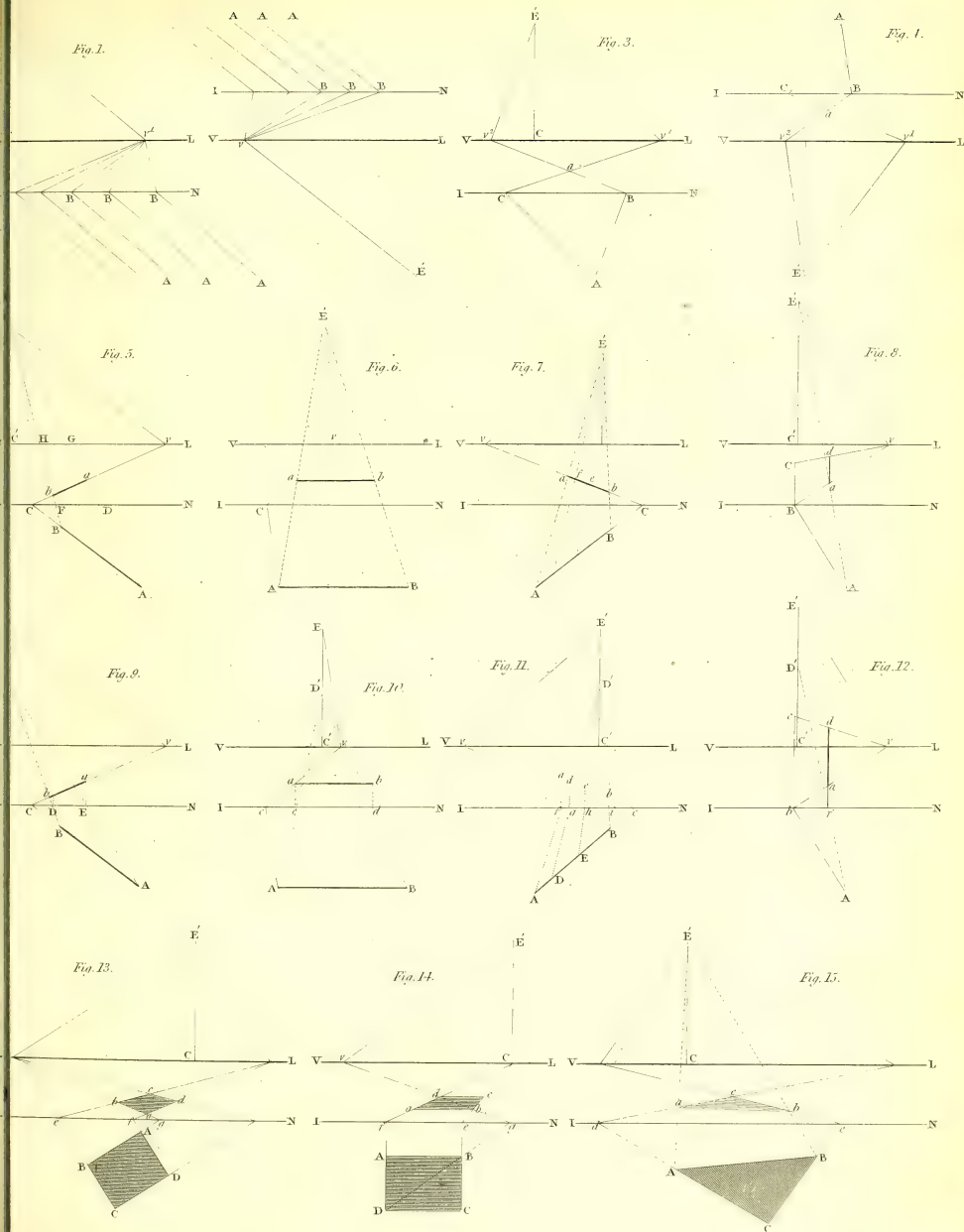
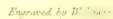




PLATE III.





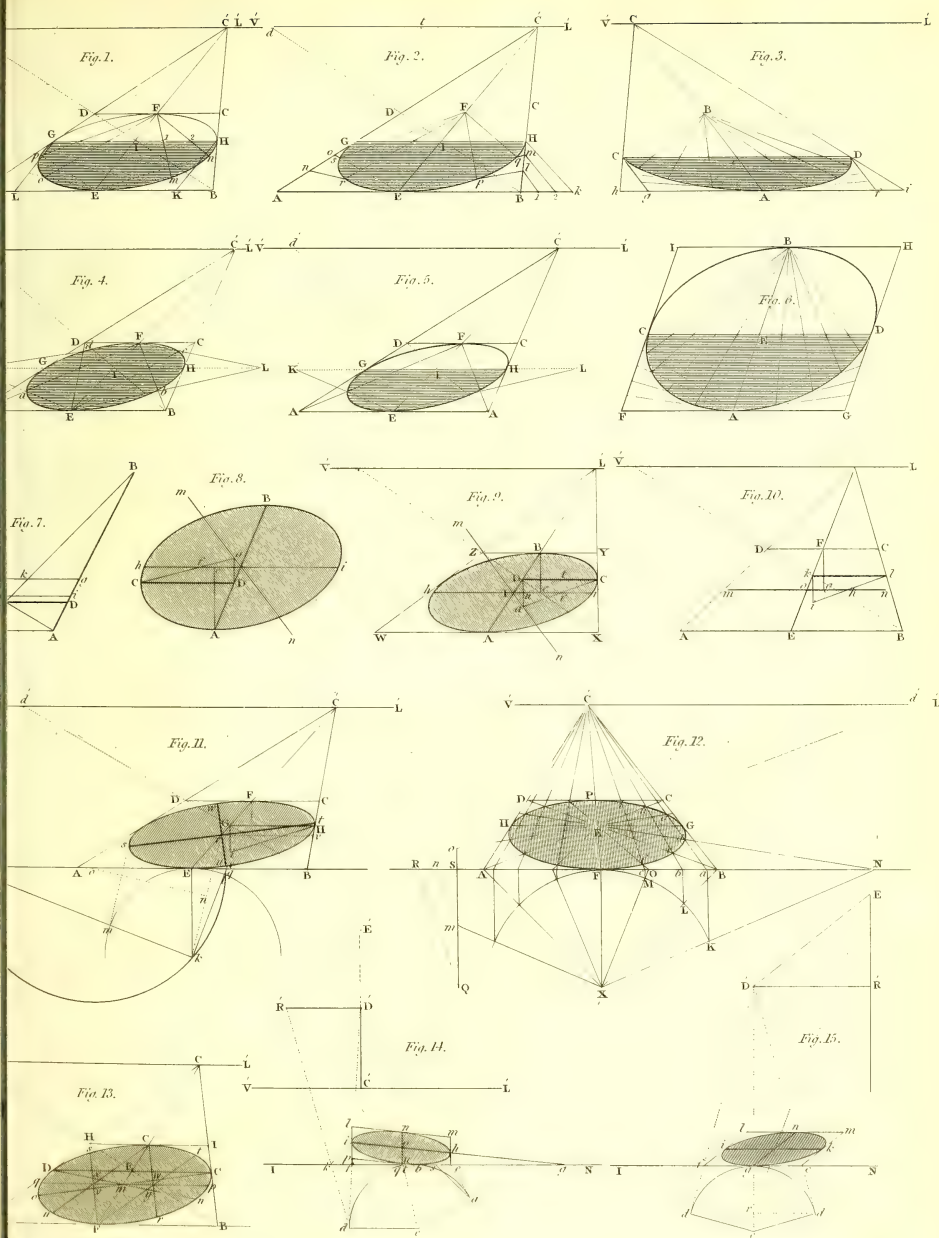






Fig. 1.

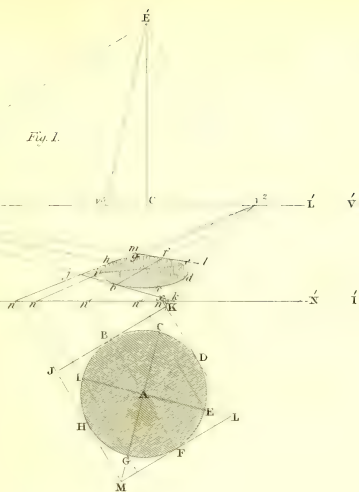


Fig. 2.

Invented by P. N.

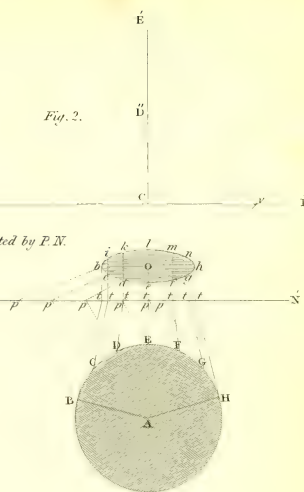


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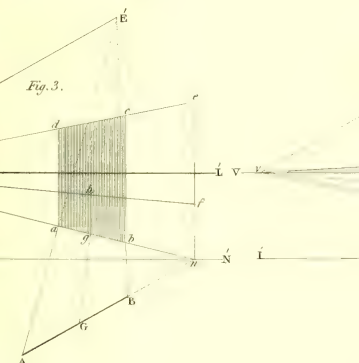


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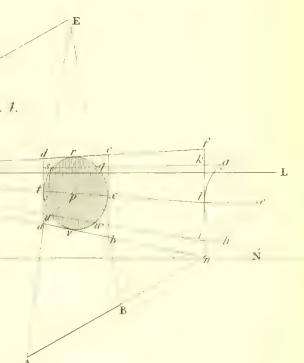


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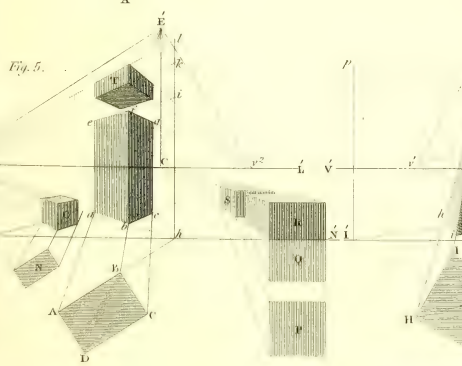
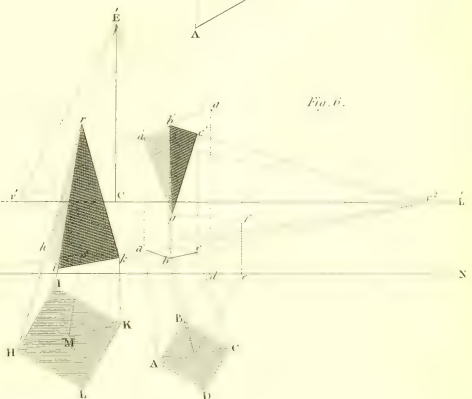
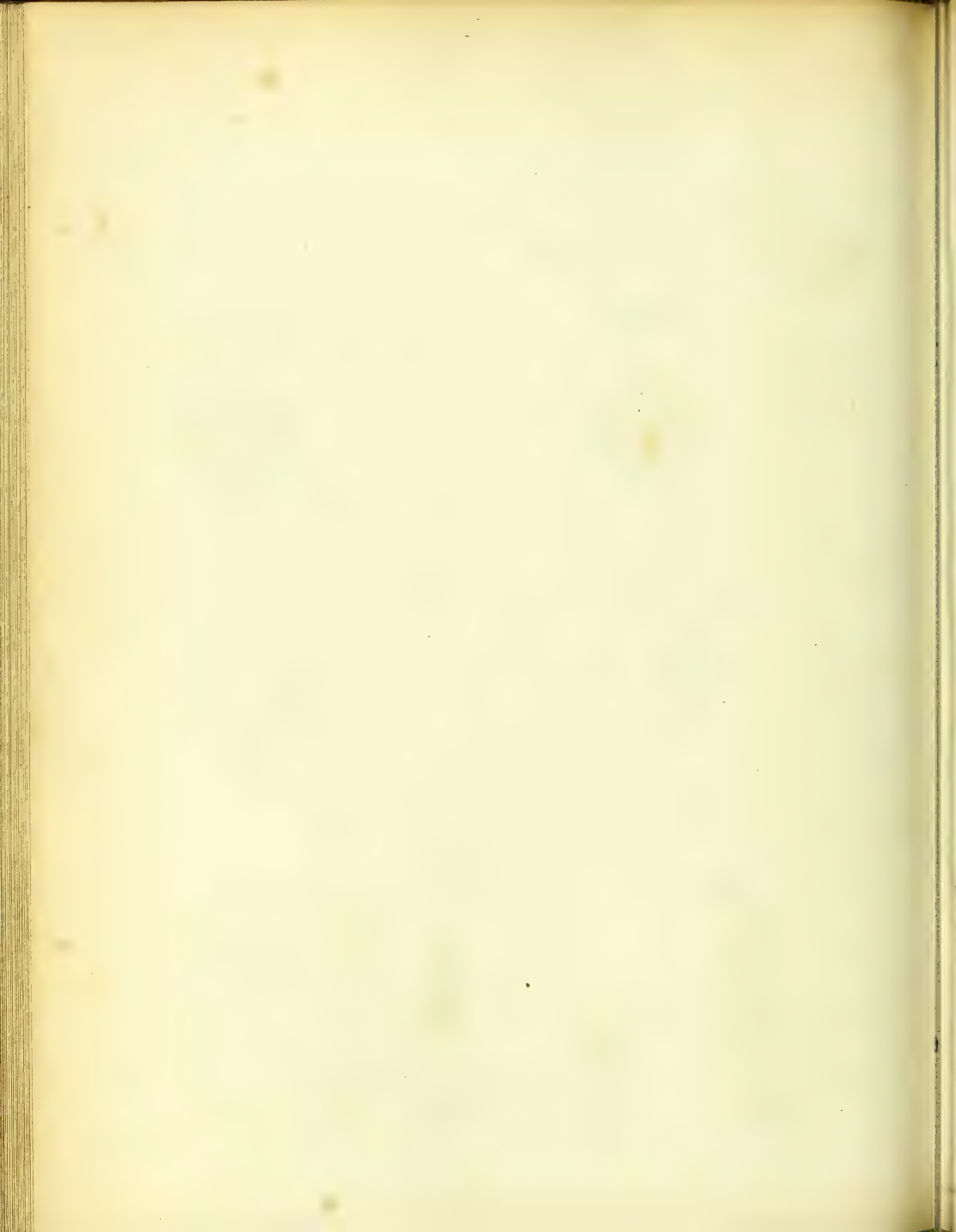


Fig. 6.





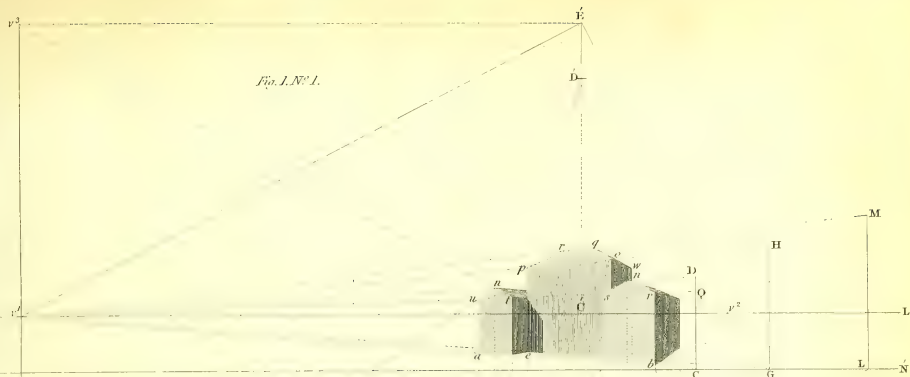


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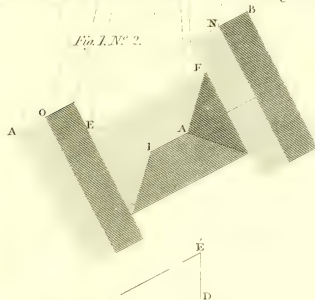


Fig. 1. N° 3.



Fig. 2. N° 4.

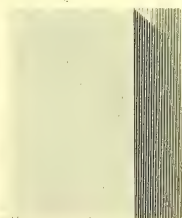


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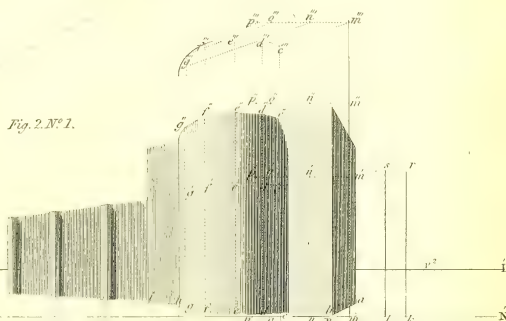
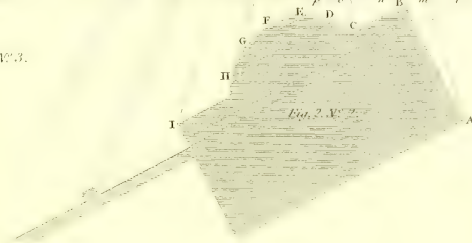
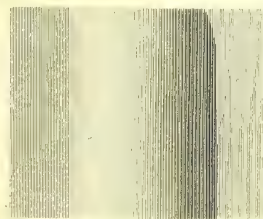


Fig. 2. N° 3.







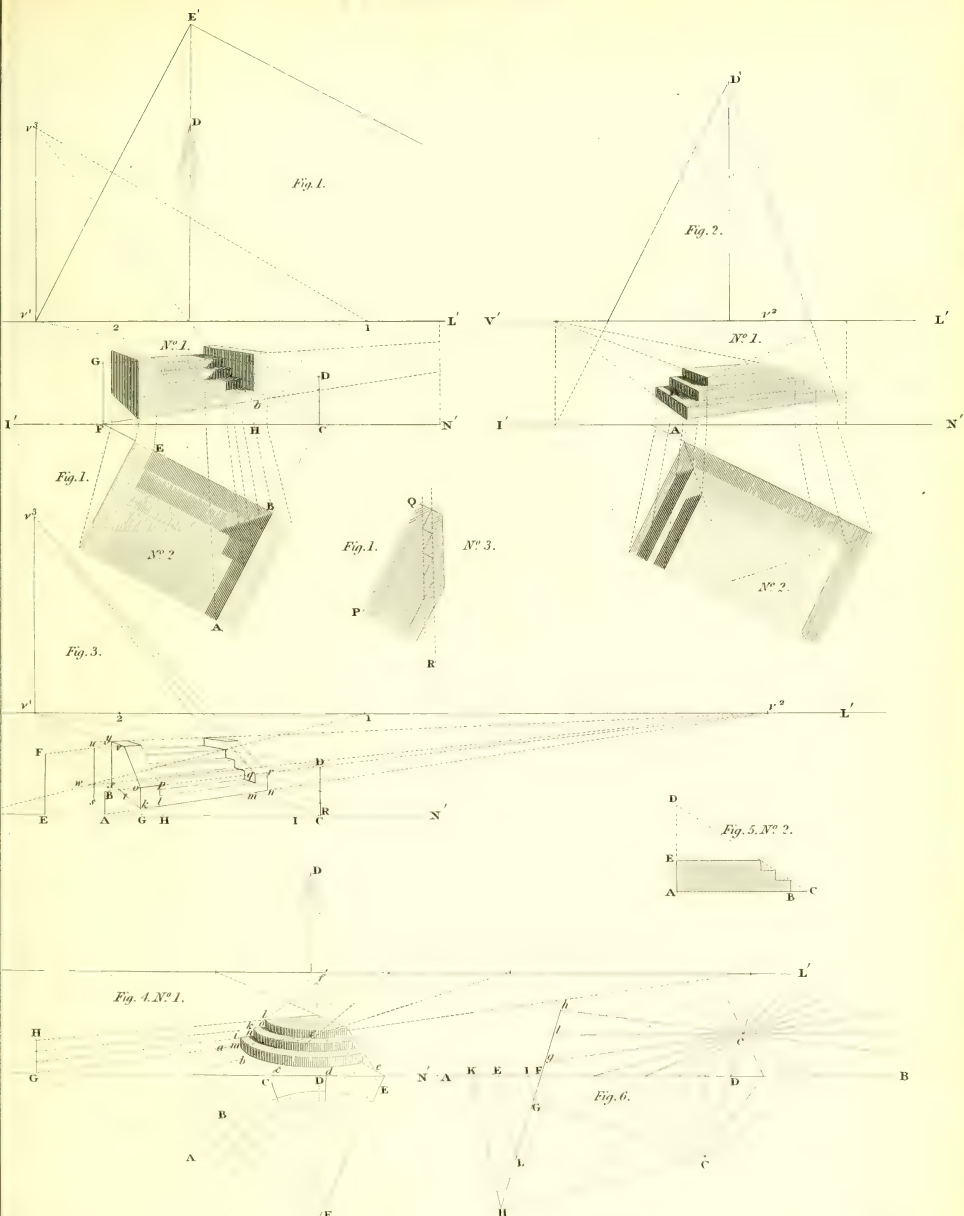




Fig. 1. N° 1.

Fig. 1. N° 2.

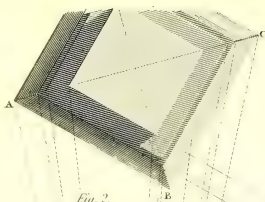
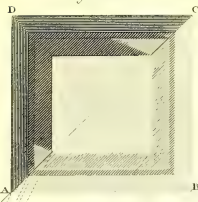
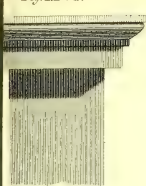
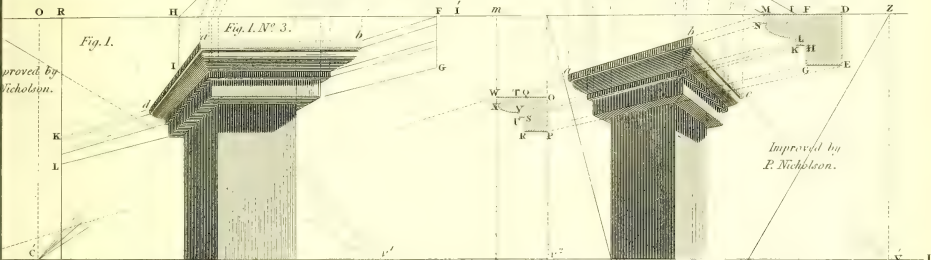


Fig. 1.

Fig. 1. N° 3.

proved by  
Nicholson.



Improved by  
P. Nicholson.

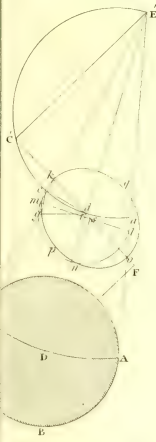


Fig. 1.  
Invented by  
P. Nicholson.

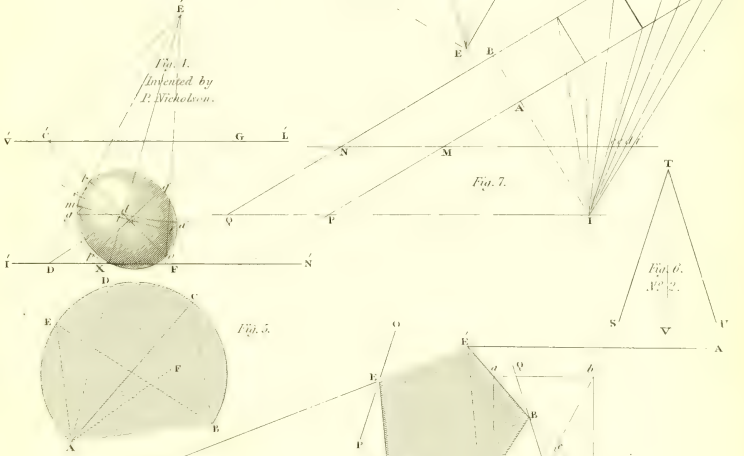
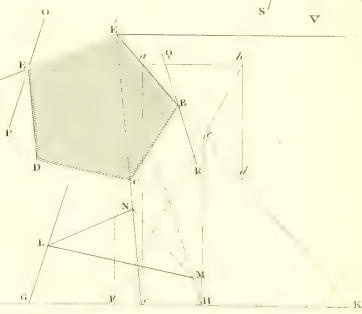
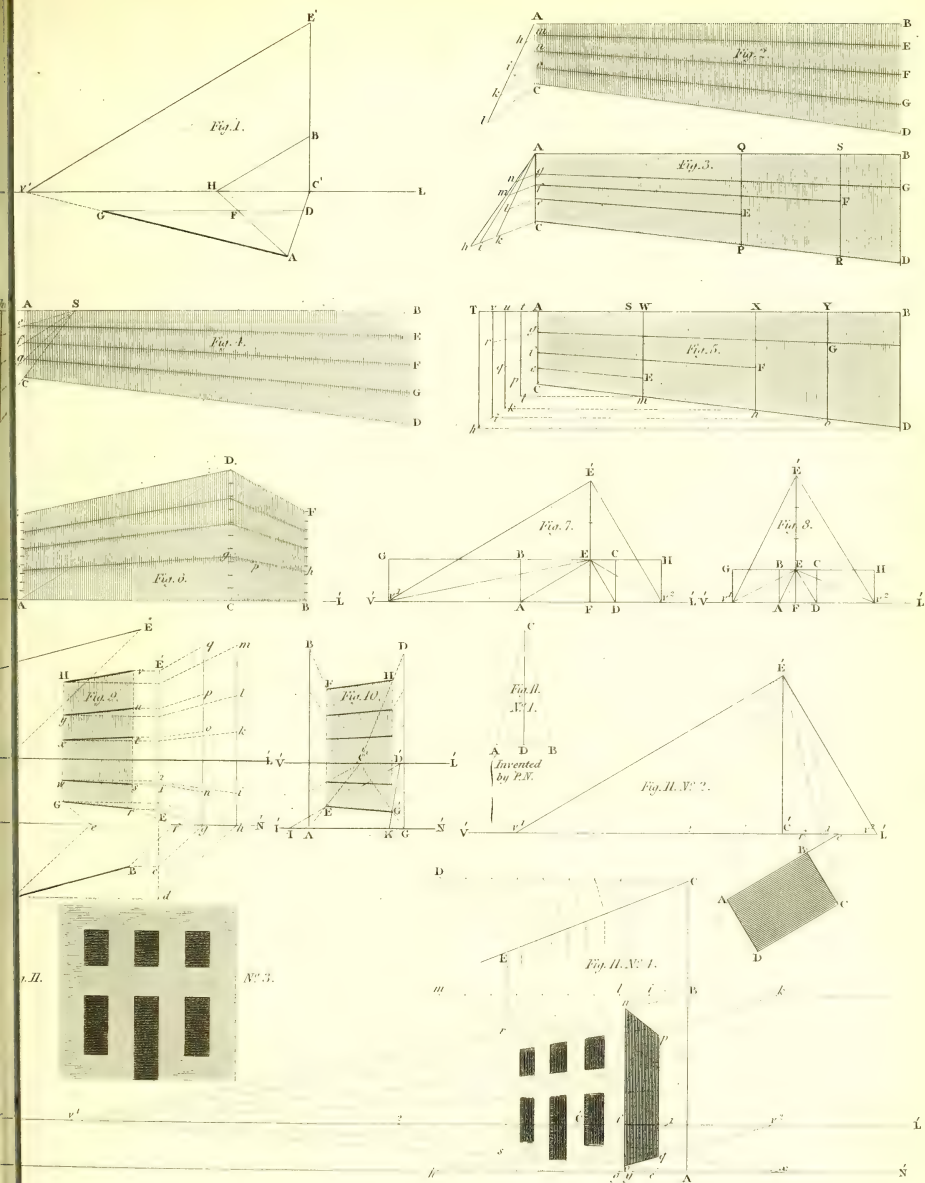


Fig. 6. N° 1.  
Invented by  
P. Nicholson.

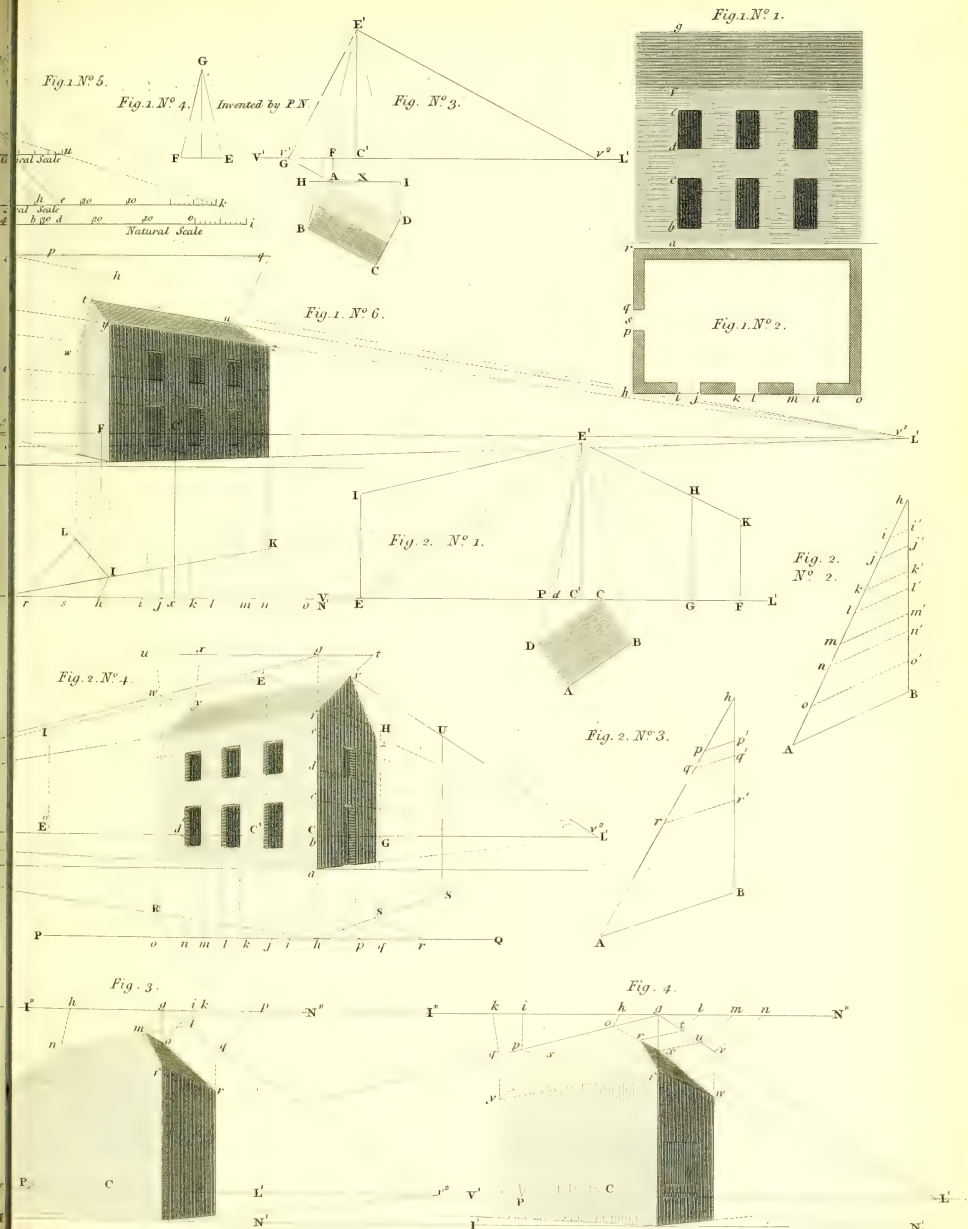


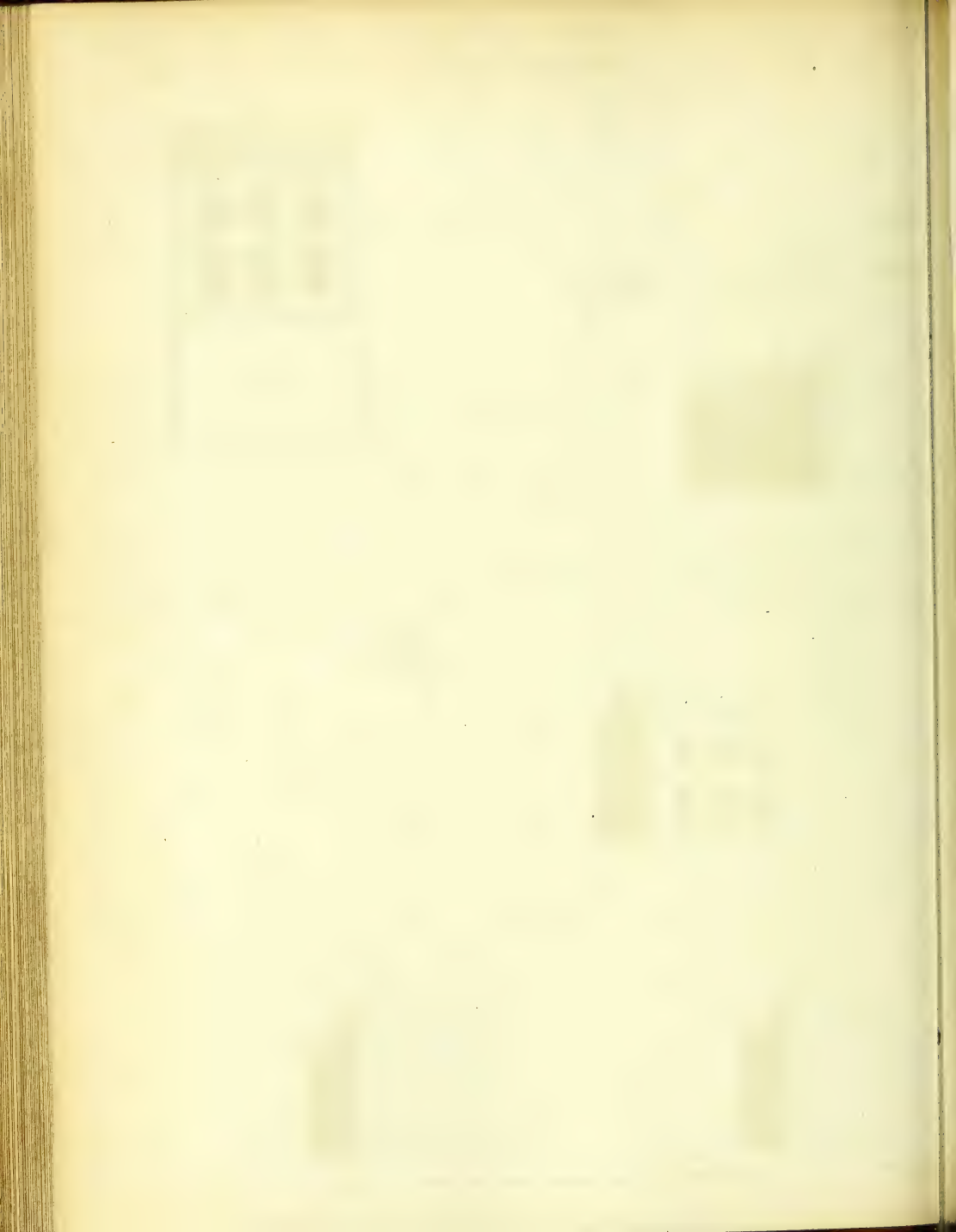












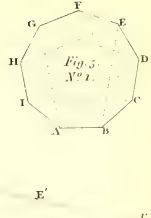
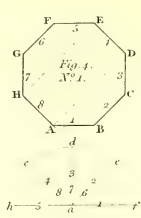
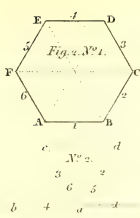
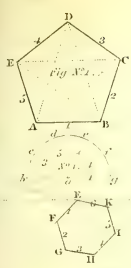
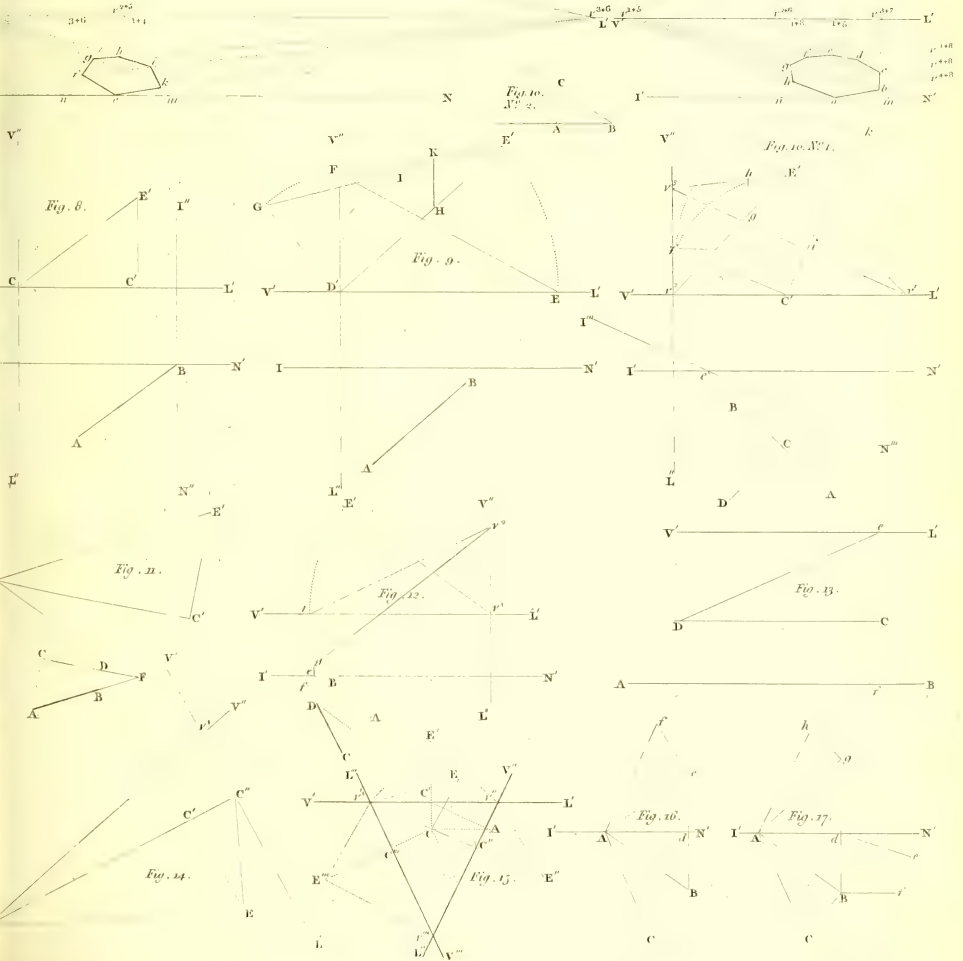


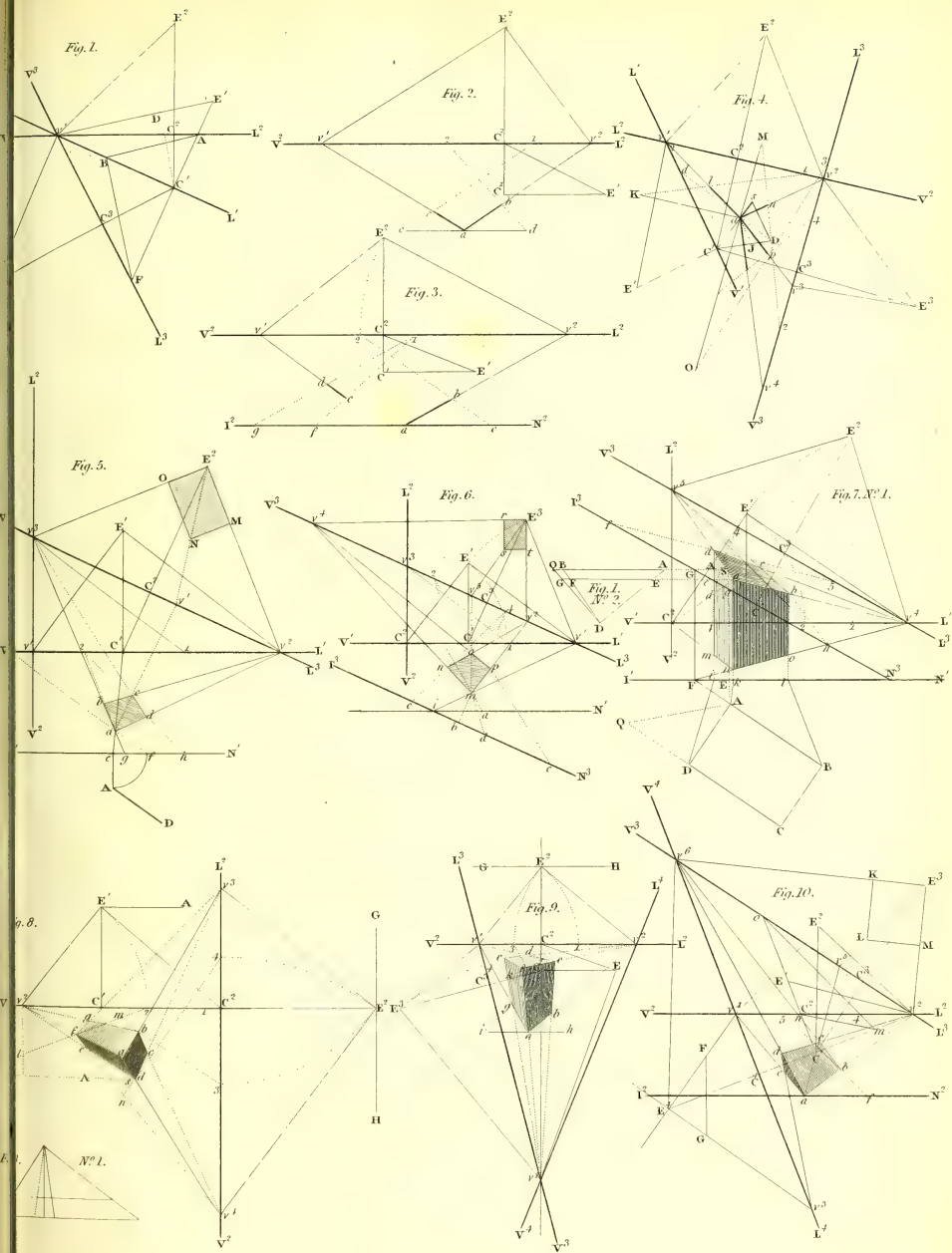
Fig. 6.

Fig. 7.











# PLANETARY MACHINES.

PLATE I.

## COMETARIUM.

Fig. 1.

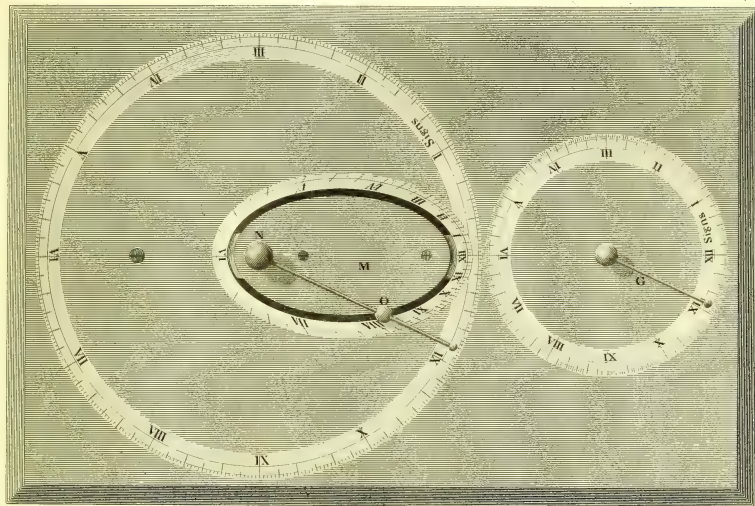
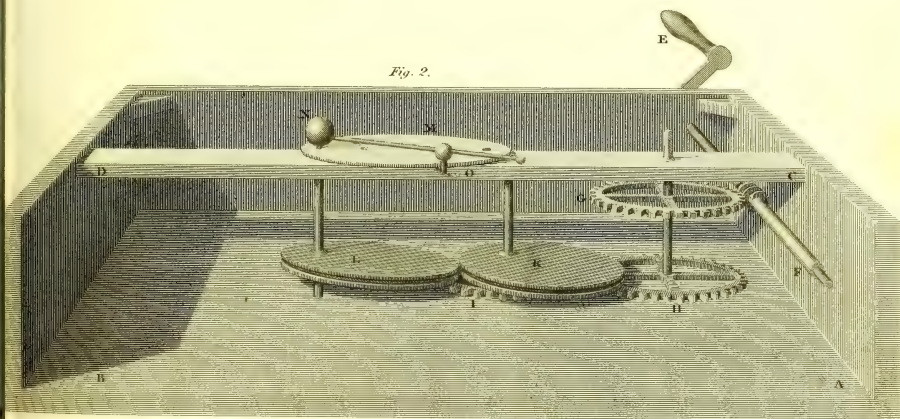
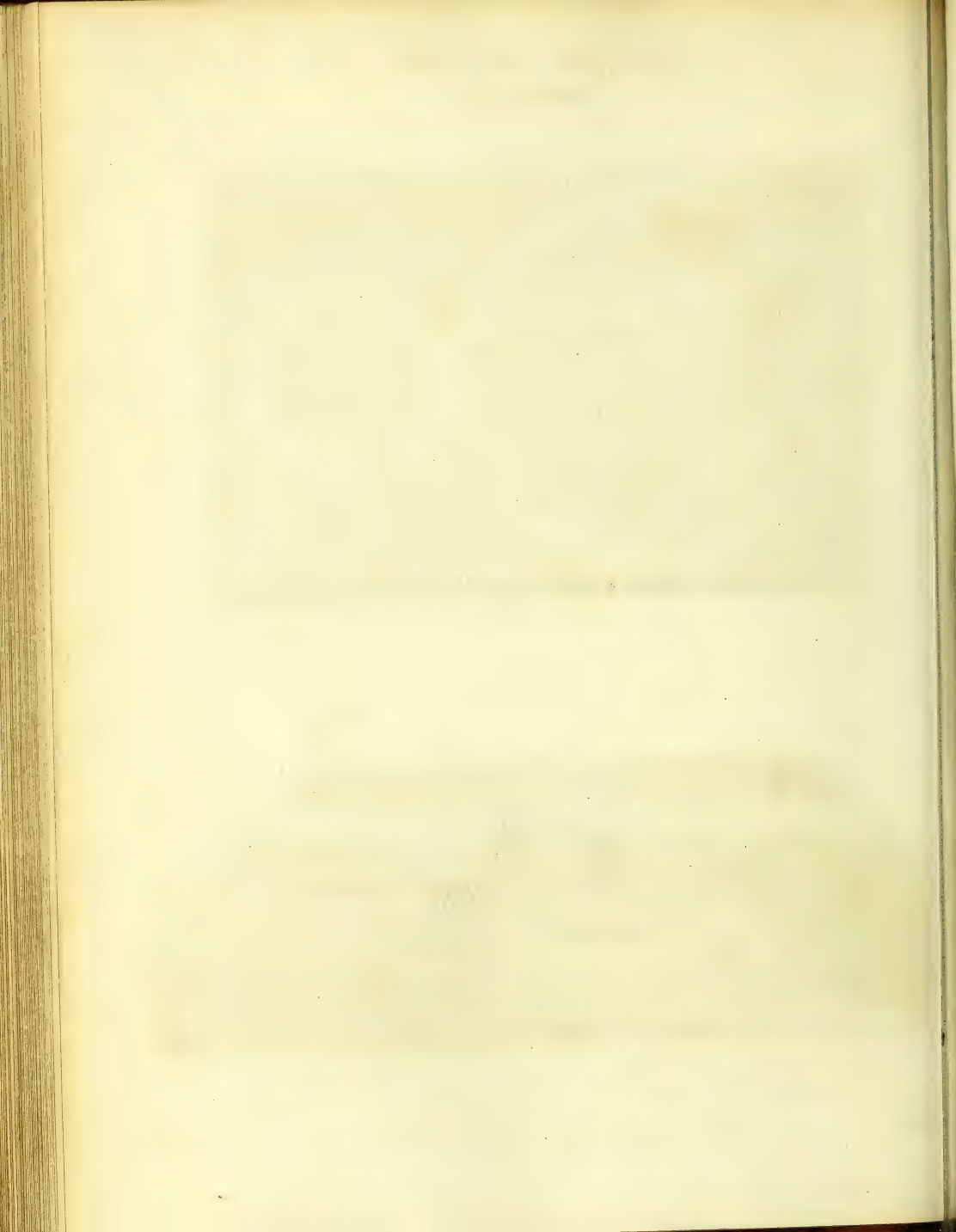


Fig. 2.





# PLANETARY MACHINES.

PLATE II.

## COMETARIUM,

by W. Jones.

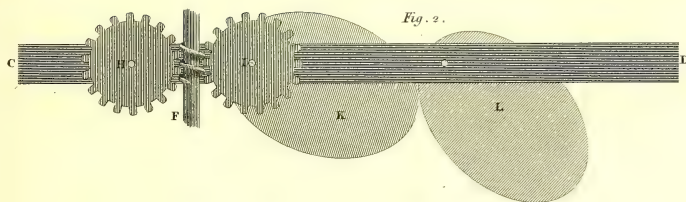


Fig. 2.

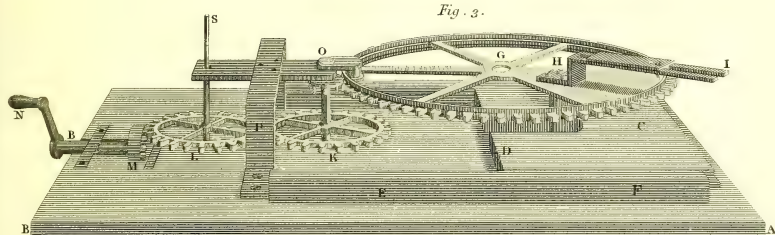


Fig. 3.

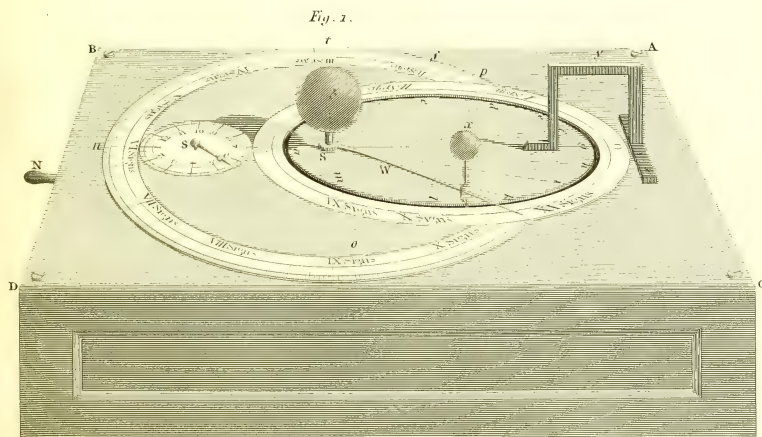
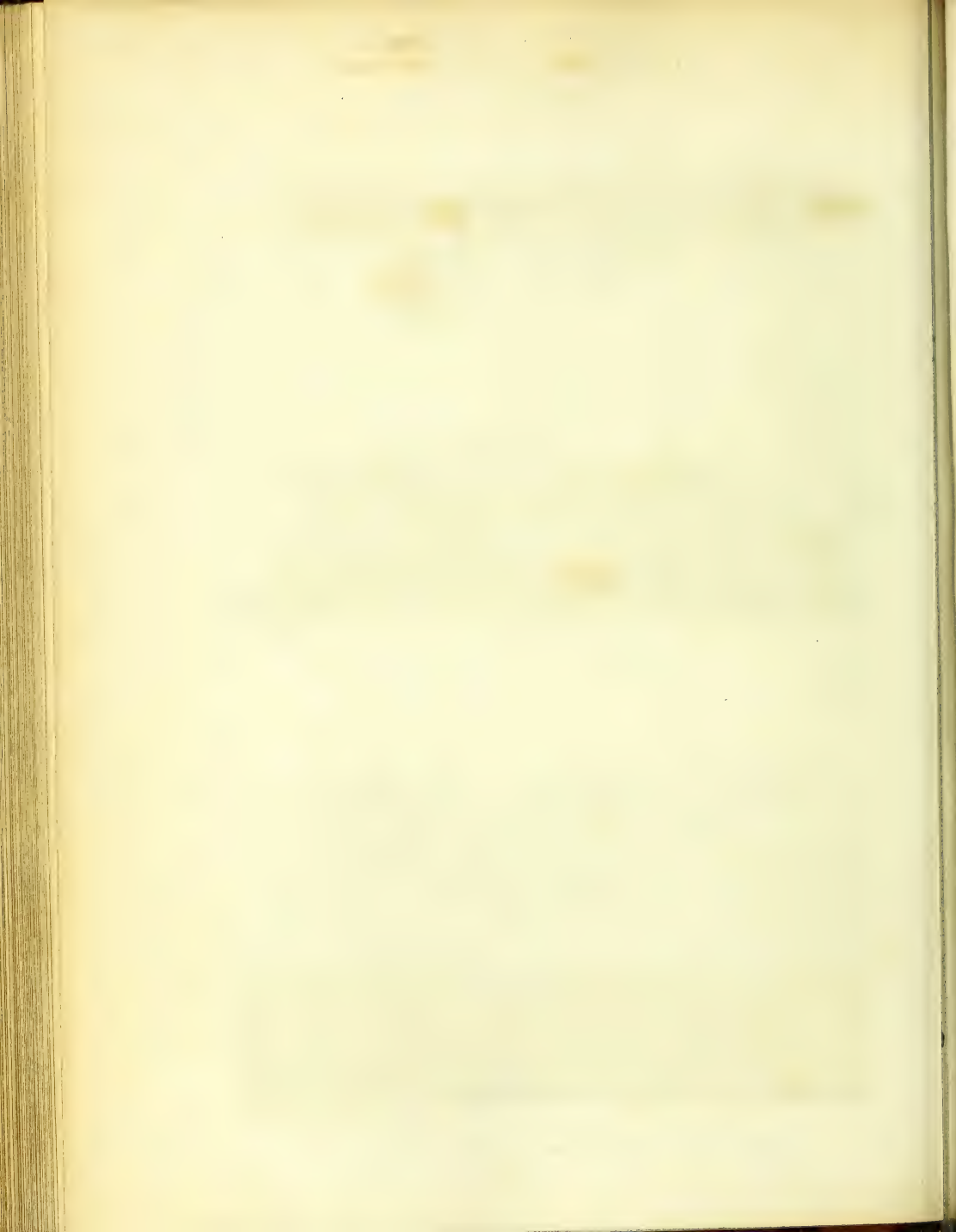


Fig. 1.



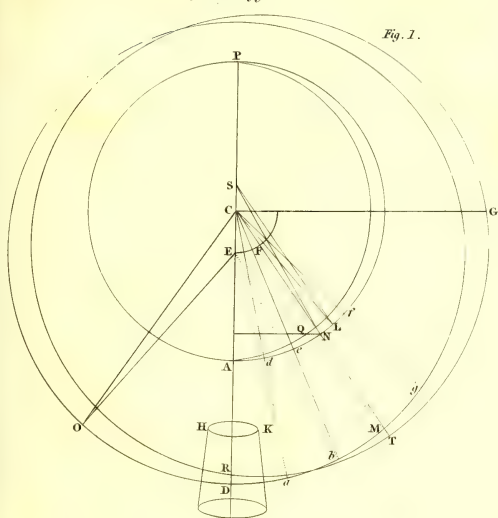


**PLANETARY MACHINES.**  
EQUATION MECHANISM OF A PLANET'S ORBIT.

PLATE III.

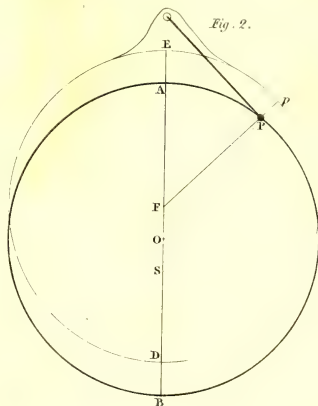
By M<sup>r</sup>. Huygens.

Fig. 1.



By M<sup>r</sup>. Jos. Priestley.

Fig. 2.



By the Rev<sup>d</sup> W. Pearson.

Fig. 4.

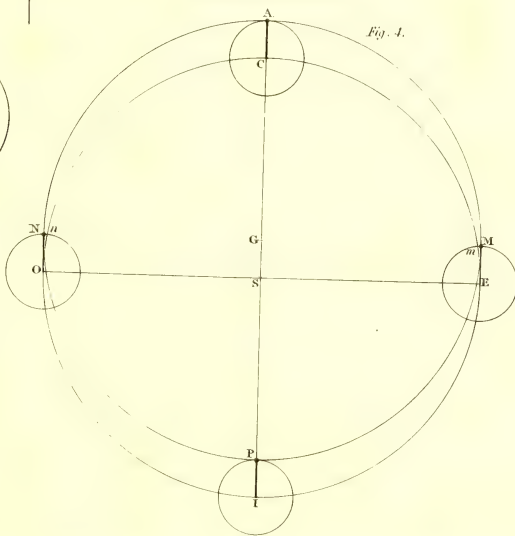


Fig. 5.

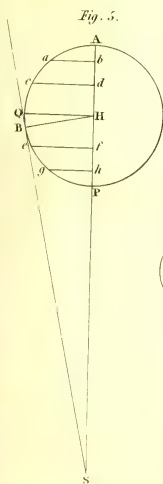
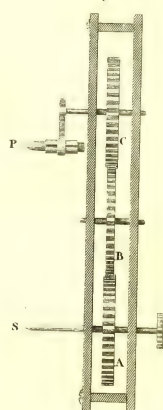
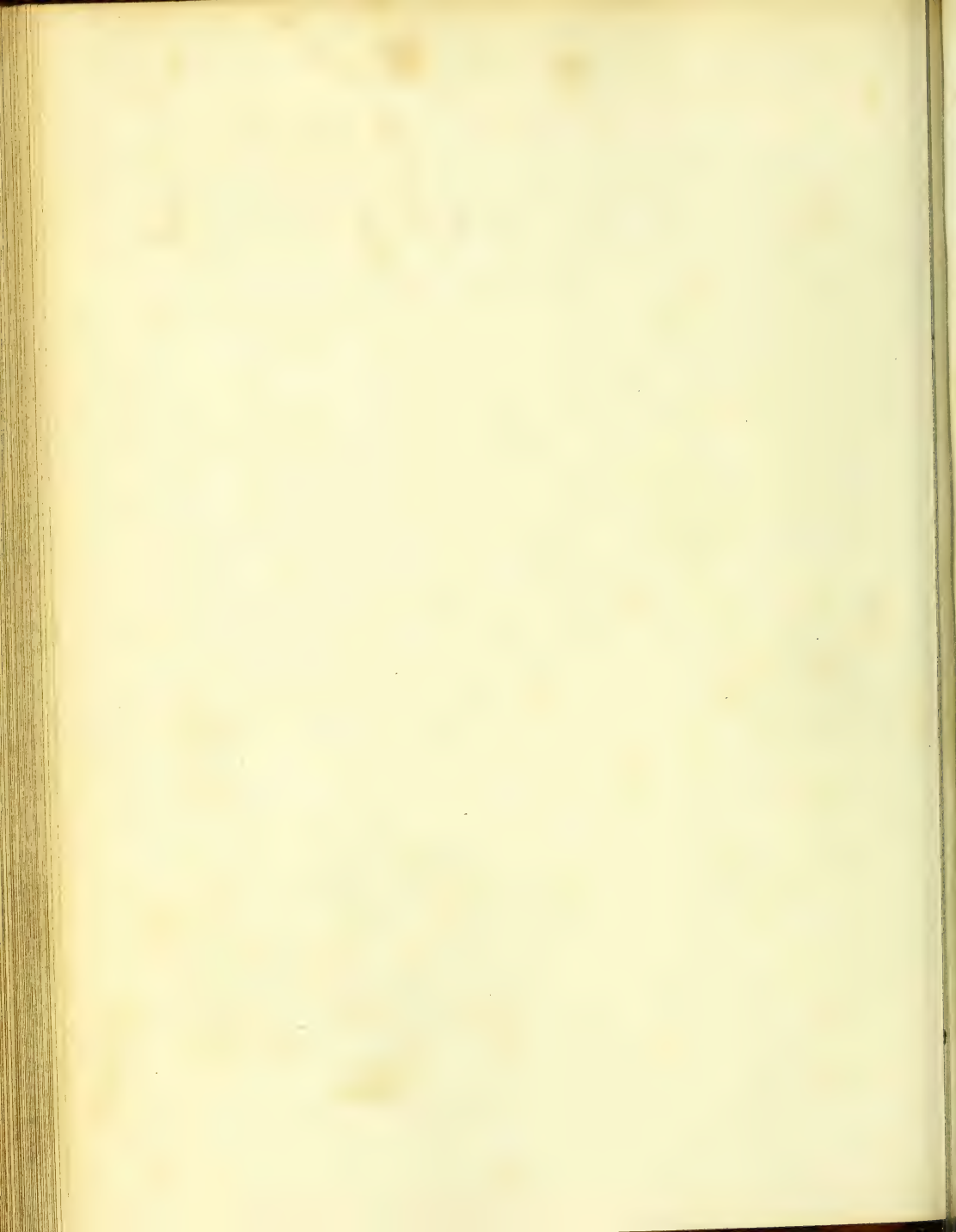


Fig. 3.





PLANETARY MACHINES.  
EQUATION MECHANISM OF A PLANET'S ORBIT.  
*By the Rev.<sup>d</sup> W. Pearson.*

PLATE IV.

Fig. 1.

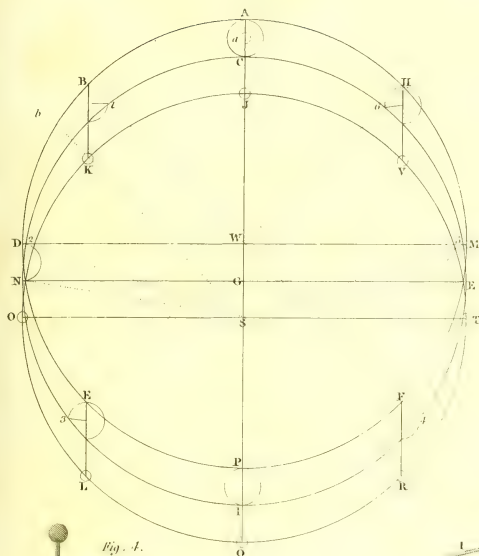


Fig. 4.

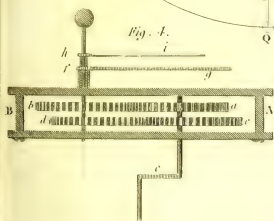


Fig. 5.

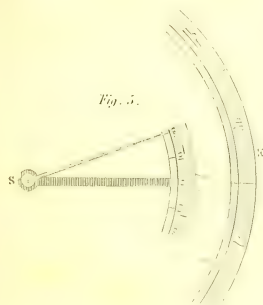


Fig. 2.

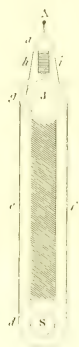


Fig. 3.

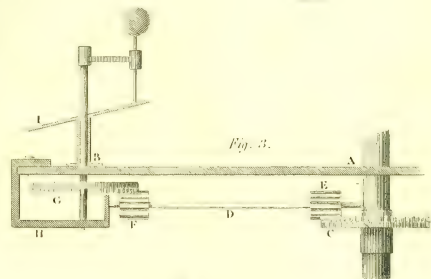
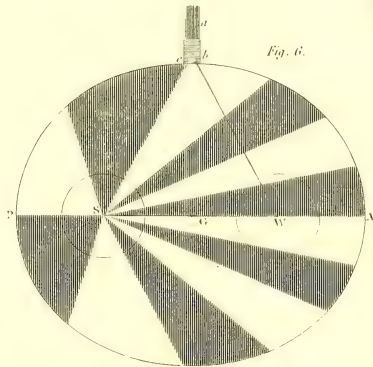
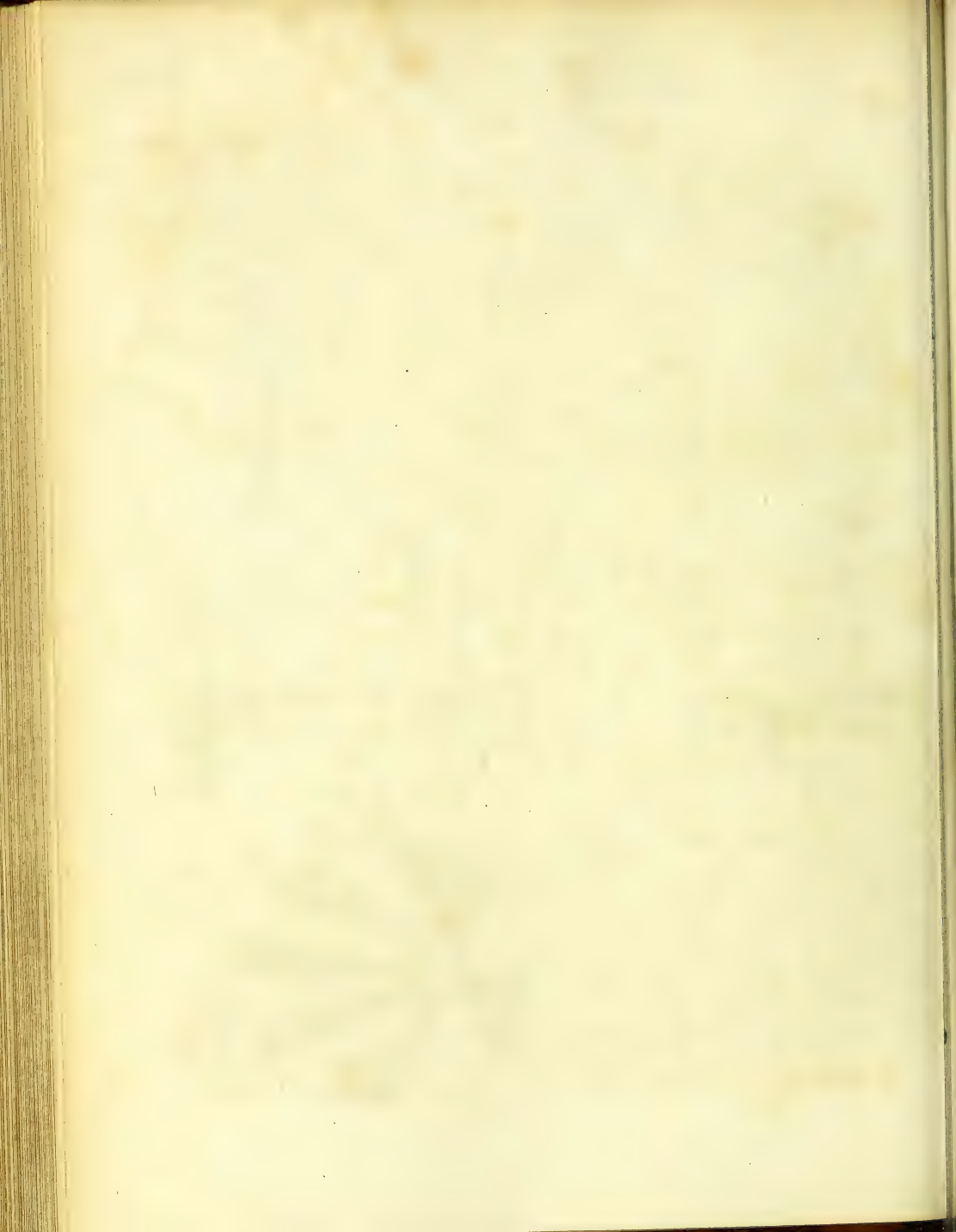


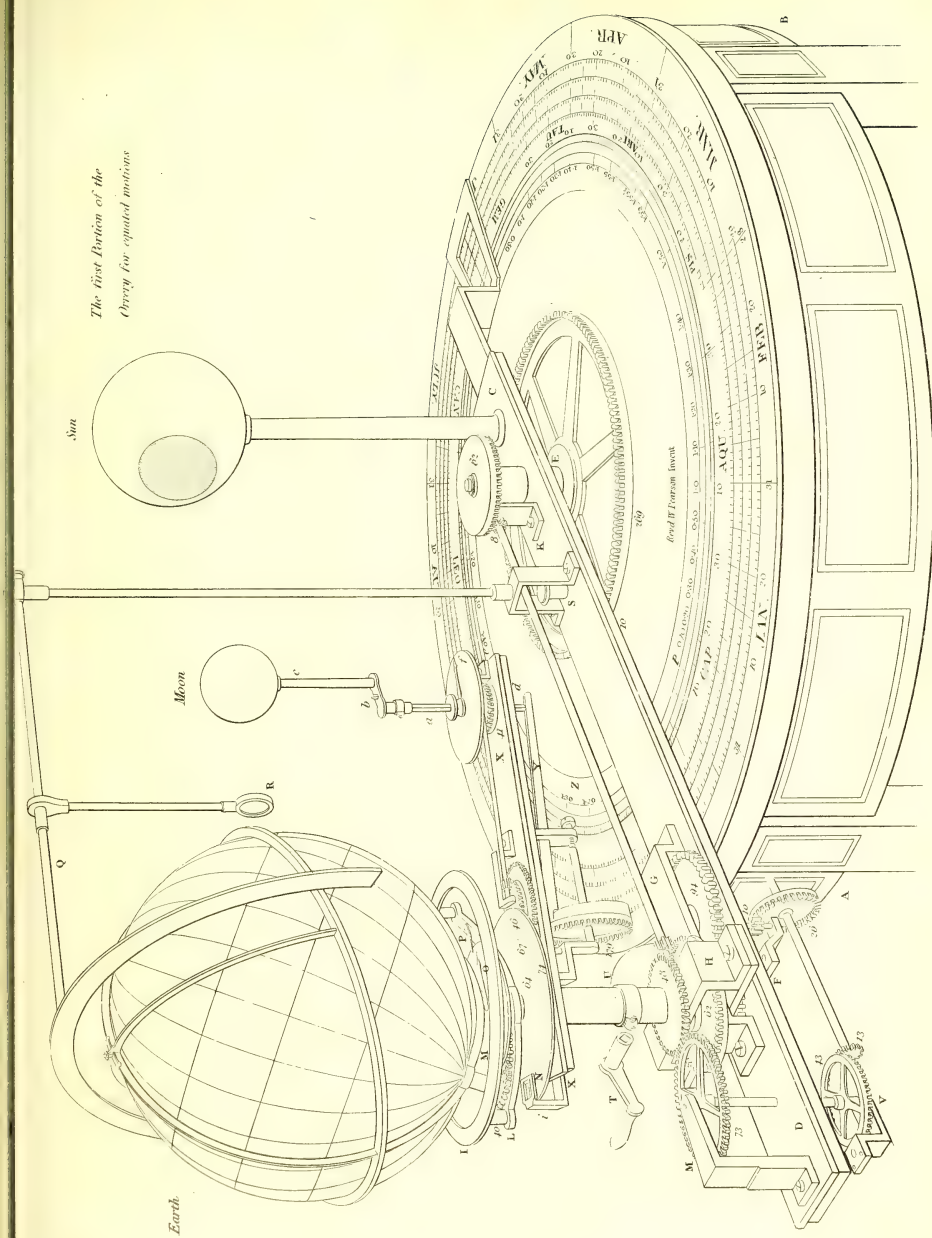
Fig. 6.





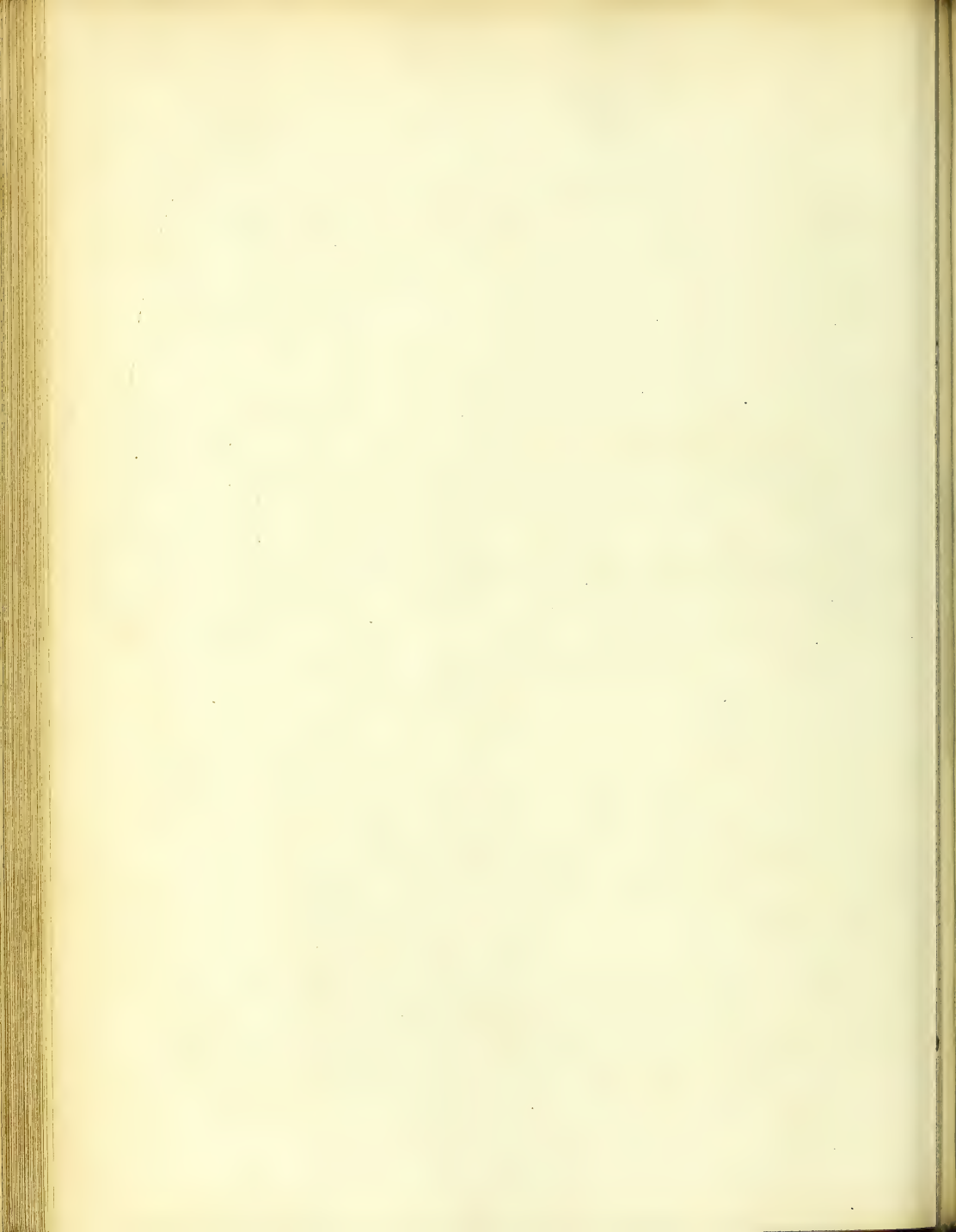


The first Part of the  
*Cherry* low equated motions



Published in the first Part of the *Cherry* low equated motions, by James, & Henry, Barrow, & Co., London.

Cherry, 1790.



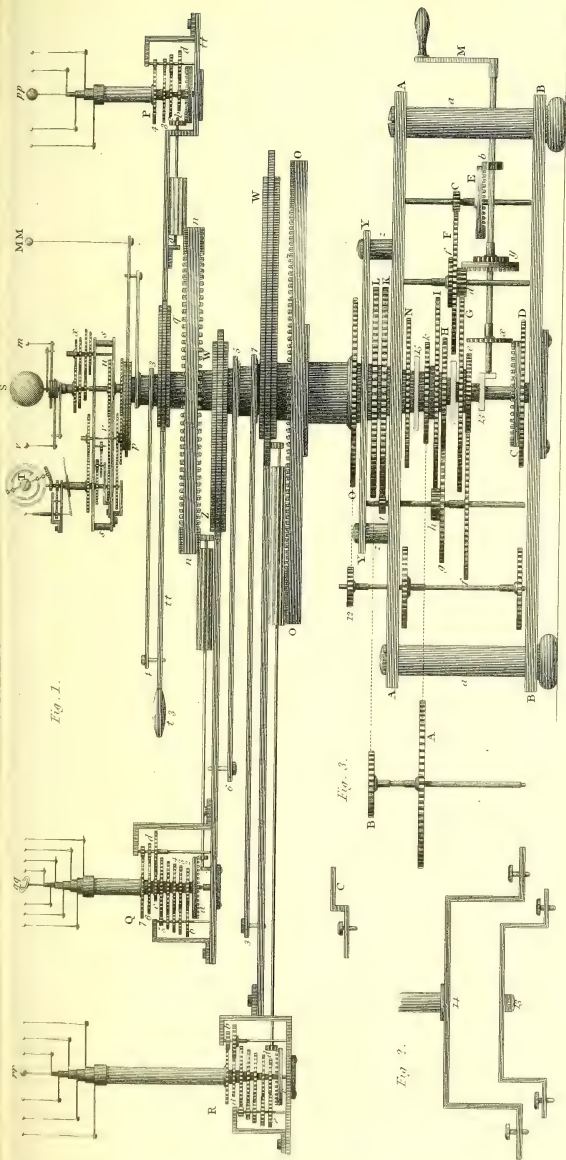


Fig. 2.

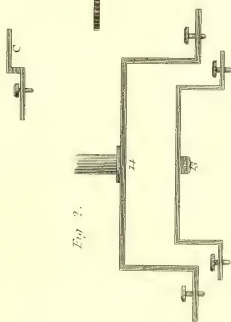
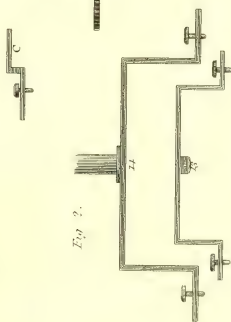
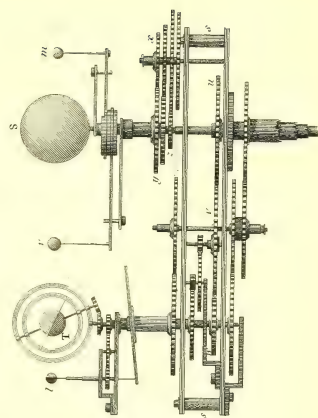
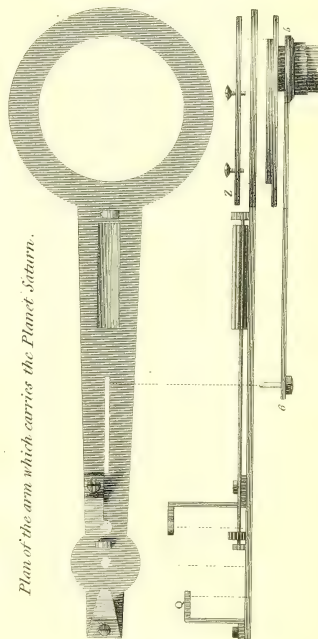


Fig. 3.



Plan of the arm which carries the Planet Saturn.





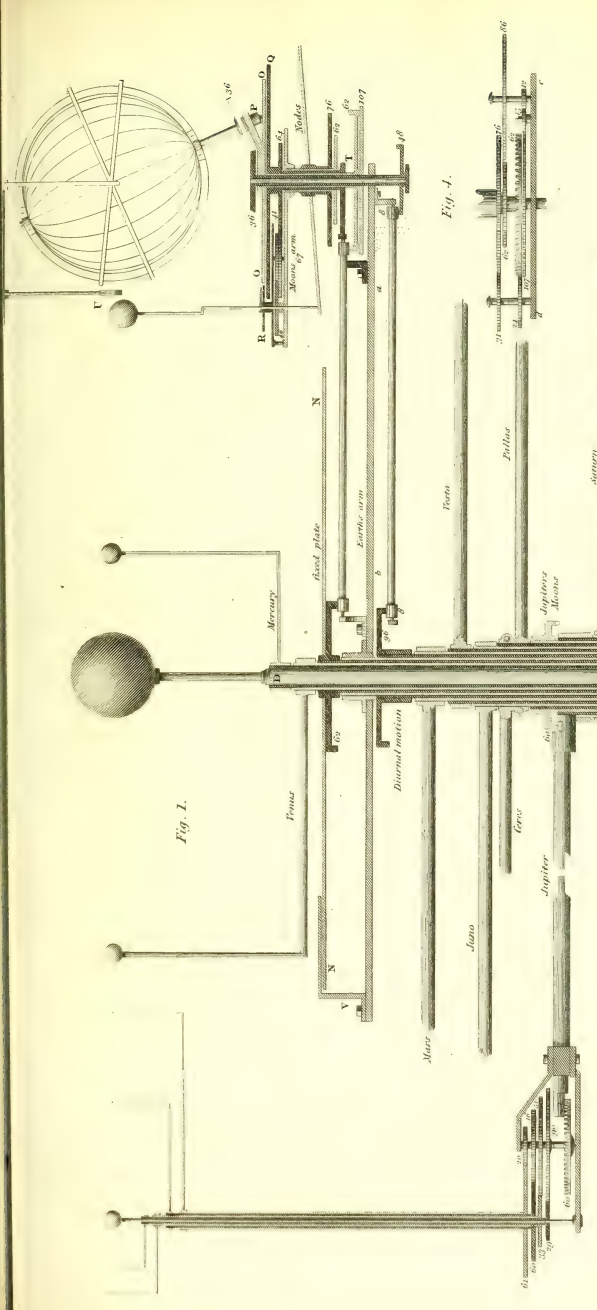


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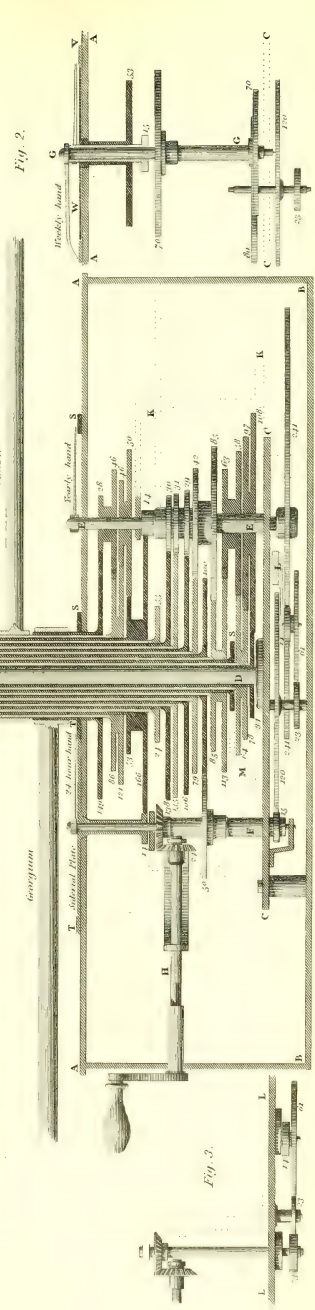
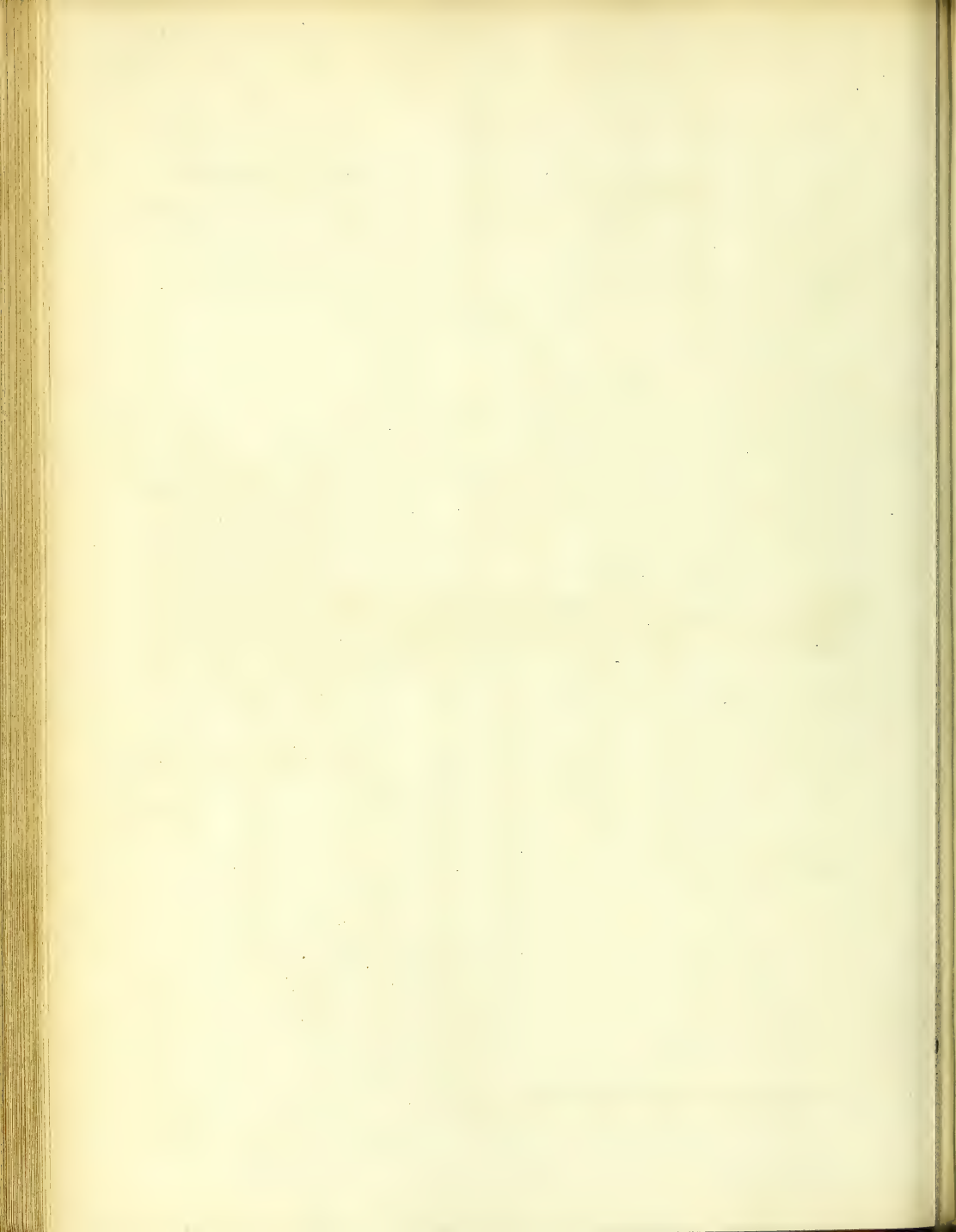


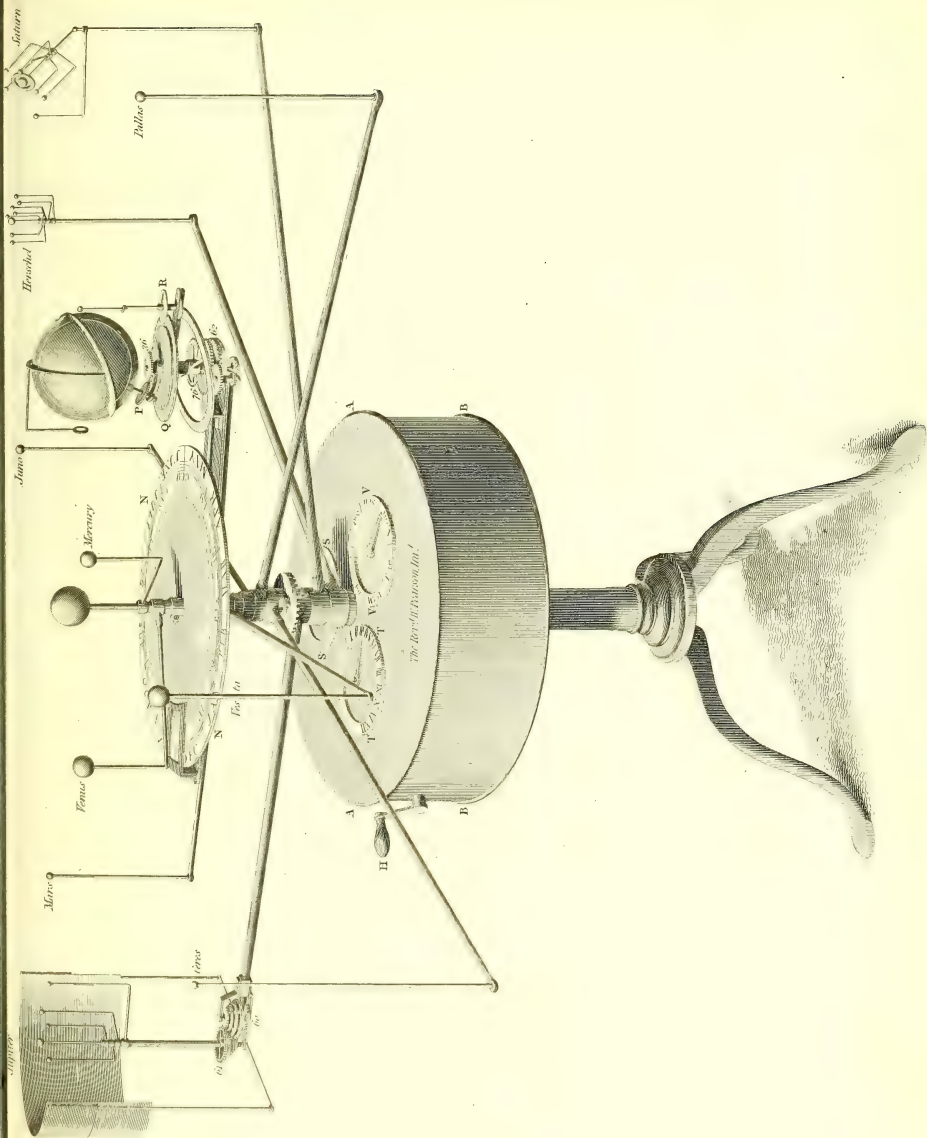
Fig. 2.

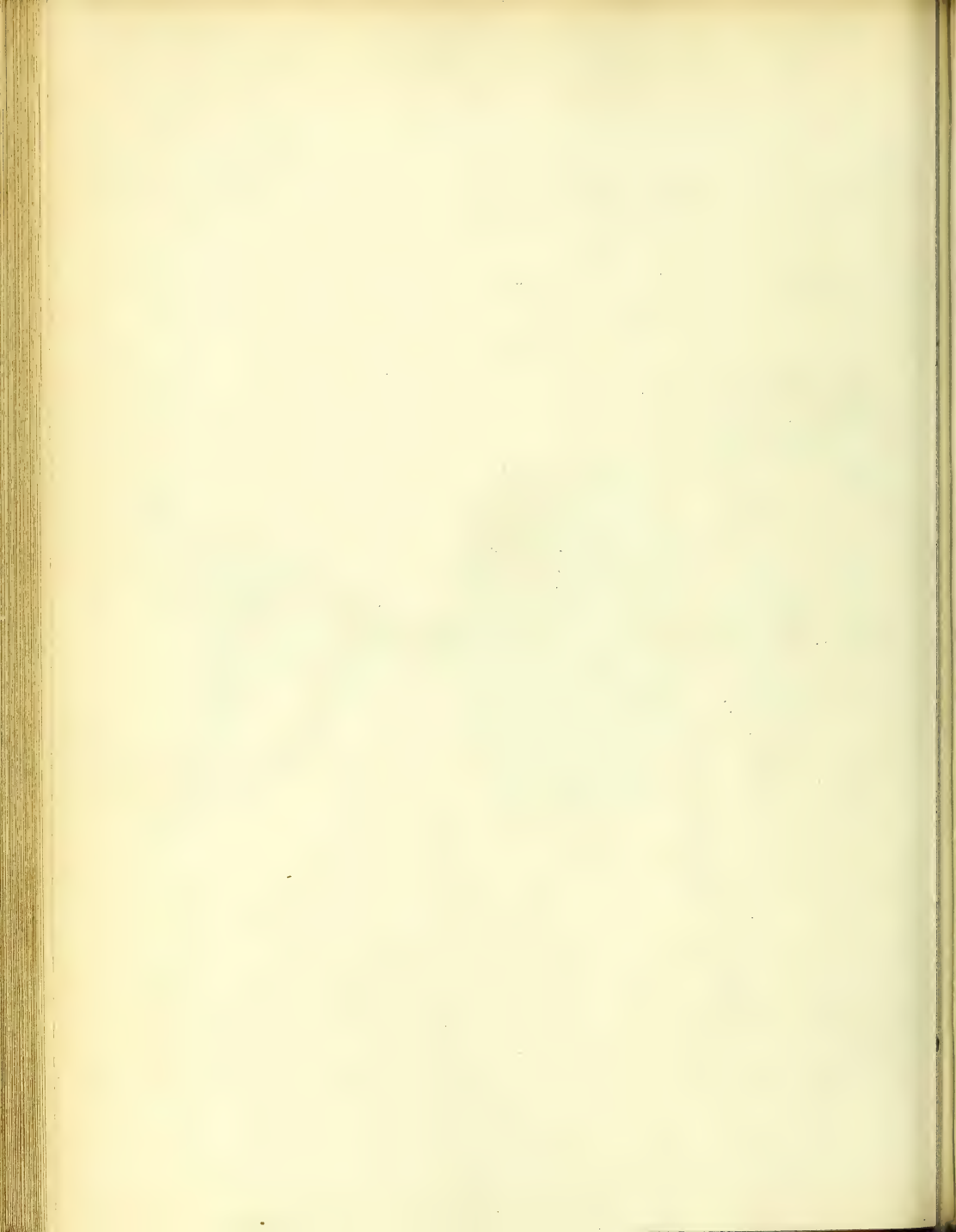
*J. Jany delin.*  
*Ben. H. Pearson Invenit.*  
*R. Filler Fecht.*  
*W. Lowry Sculp.*

Published as the Art directed, 1863, by Longman, Brown, Green, & Bowen, Paternoster Row.



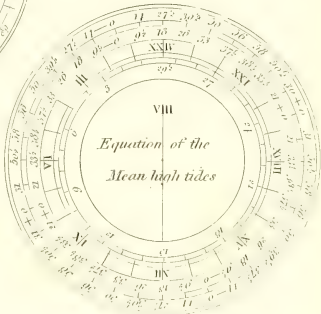
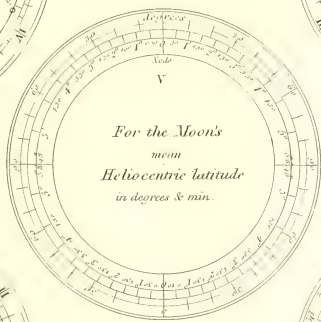
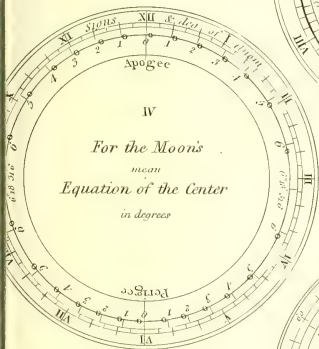
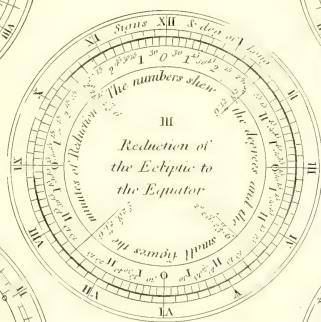
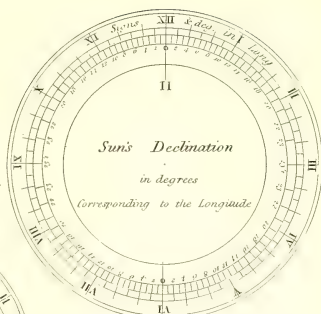
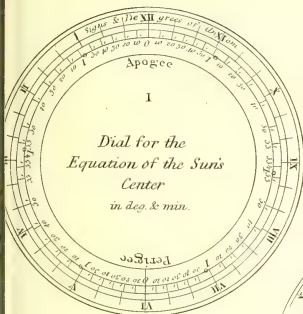


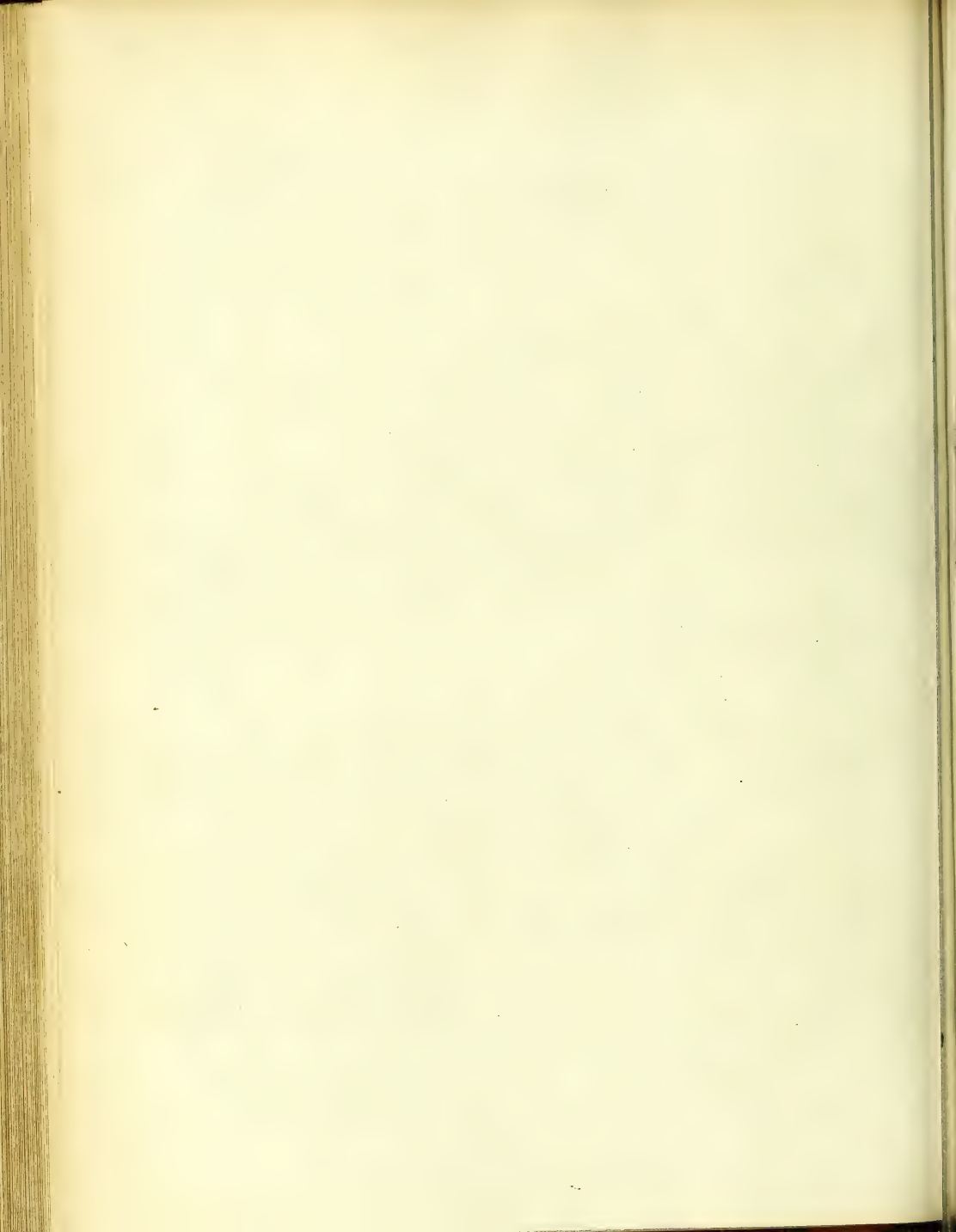




*Dials graduated for shewing  
different planetary Phenomena*

[see Orrery]



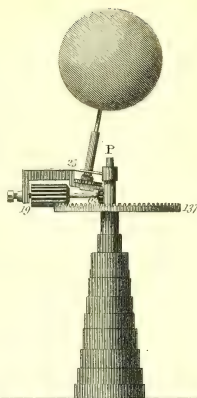
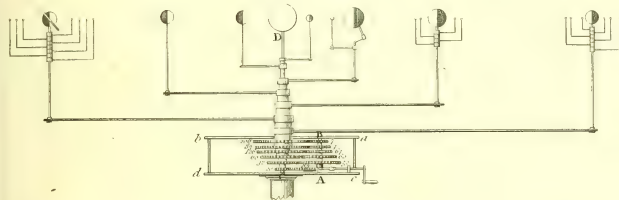




*PLANETARIUM*

*Common PLANETARIUM.*

*Fig. 1.*



*Fig. 4.*

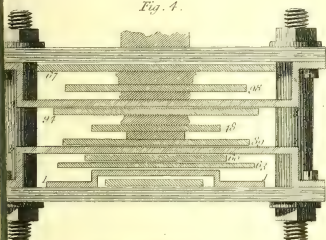


Fig. 3.

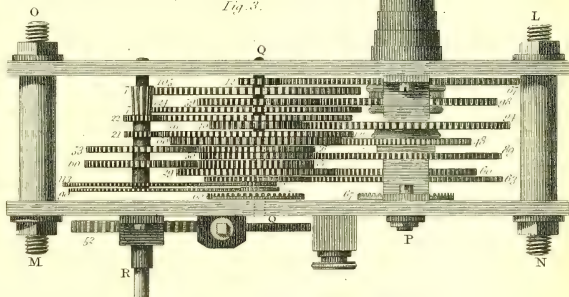


Fig. 2.

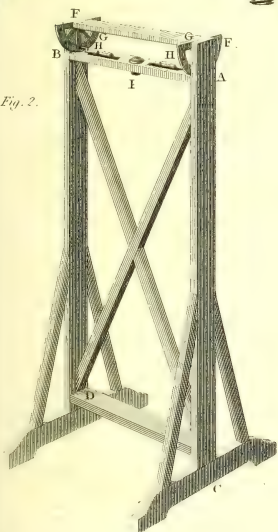
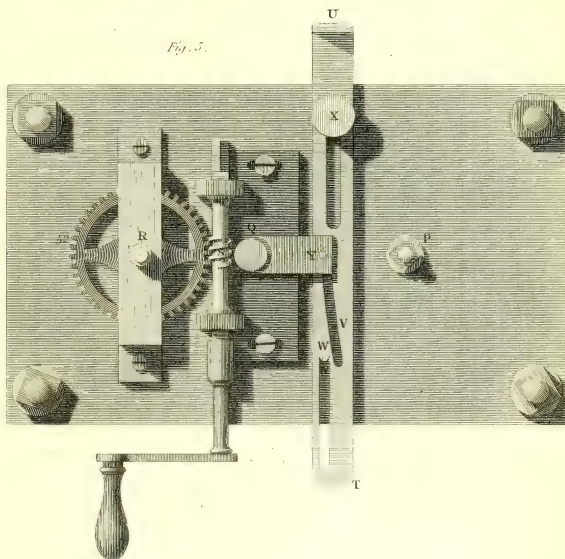
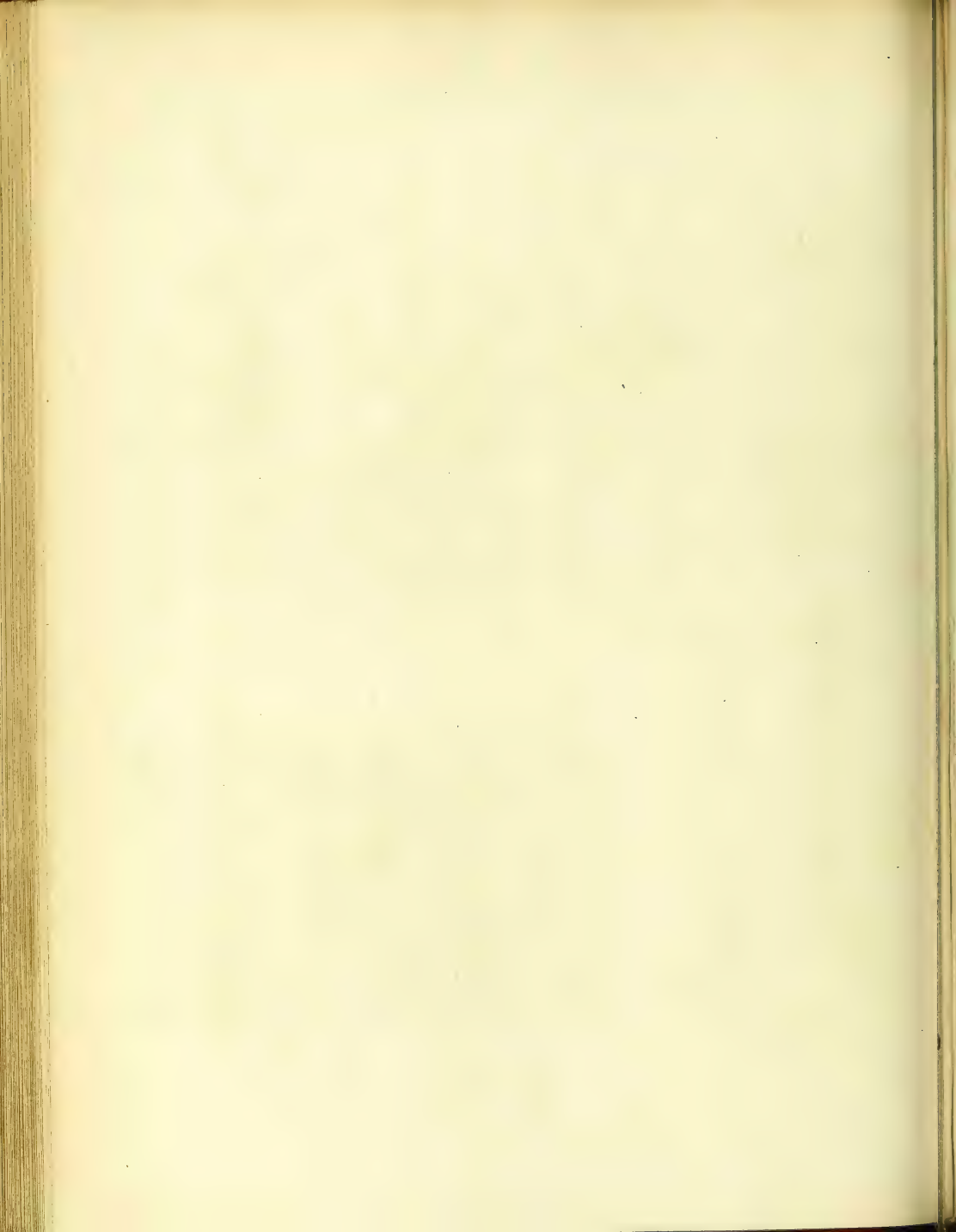
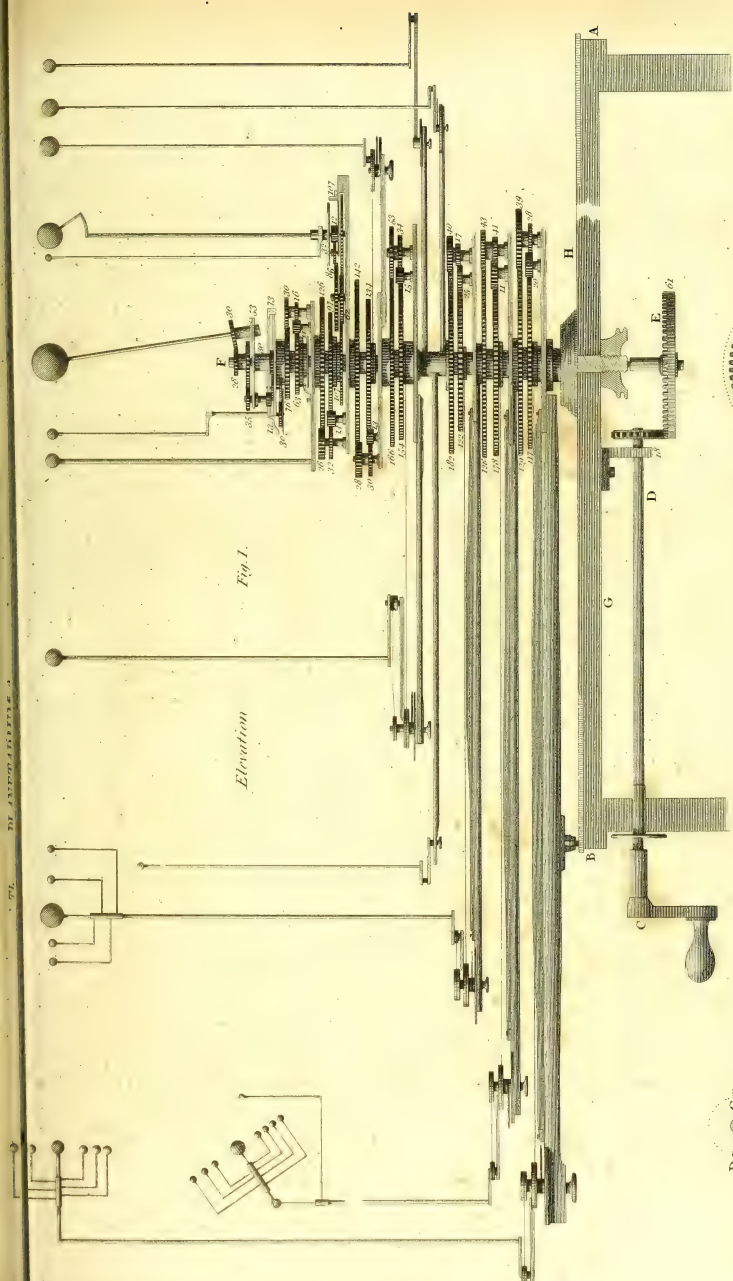


Fig. 5.







Elevation

Fig. 1.

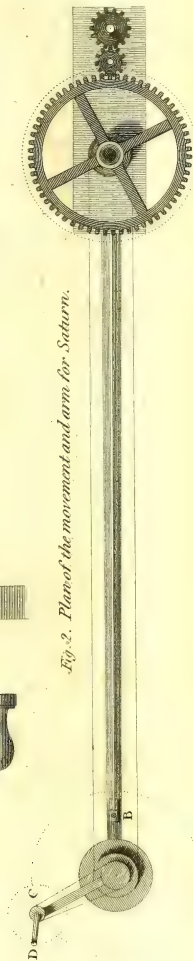


Fig. 2. Plan of the movement and arm for Saturn.







Configuration of Satellites.  $4p_{11235}$  at  $10^6$   
Fig. 4.

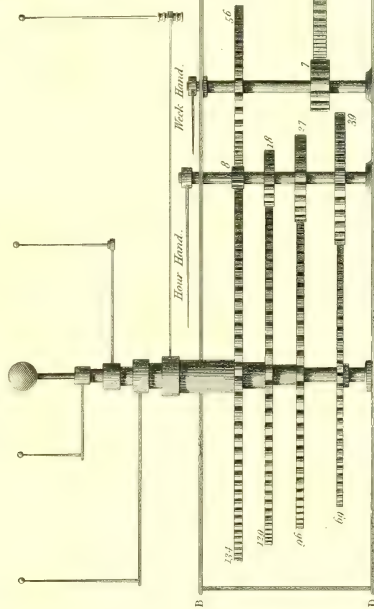
$\phi$  2 3 2 2

Fig. 1.



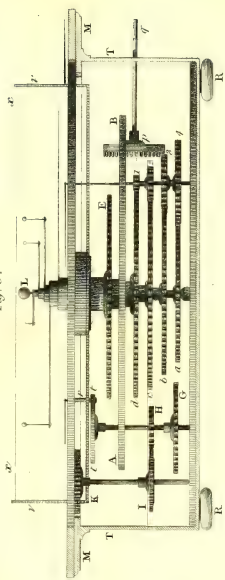
SATELLITAN by The Rev. A. Pearson.

Fig. 2.



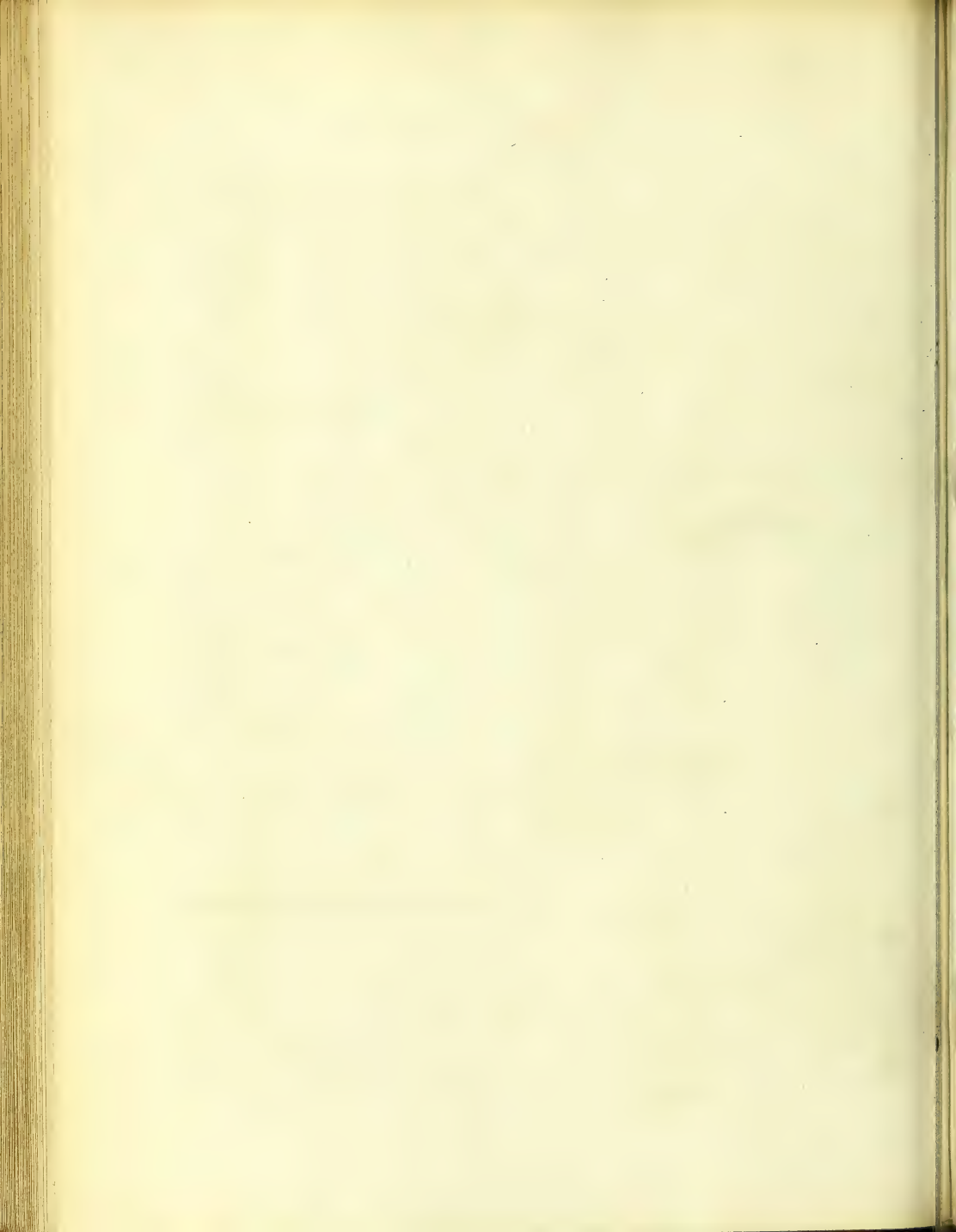
Jamier's JUVILABE.

Fig. 5.

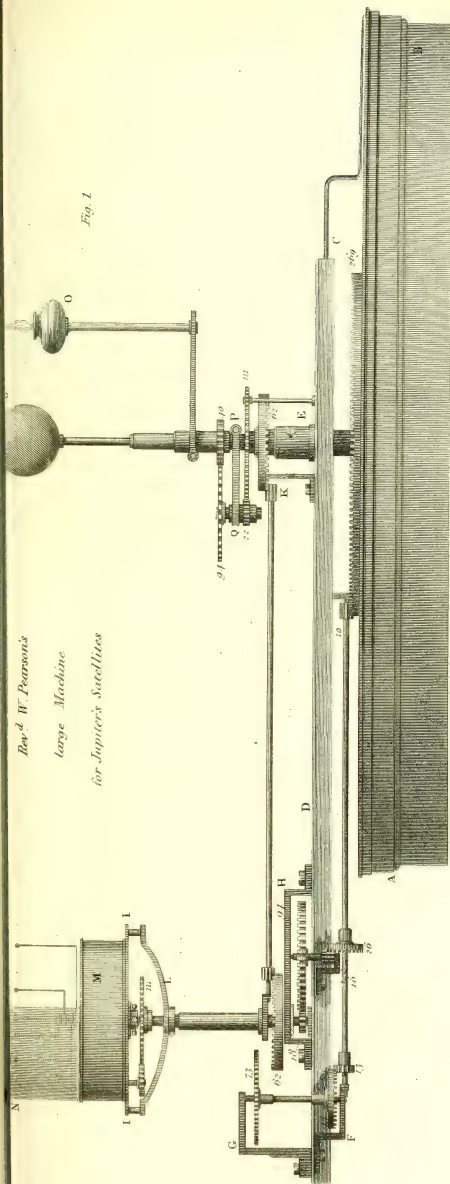


Month Hand





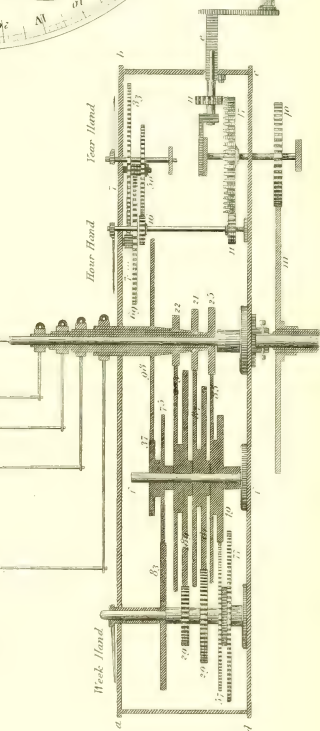
*Rev. d. W. Pearson's  
large Machine  
for Jupiter's Satellites*



*Fig. 1*

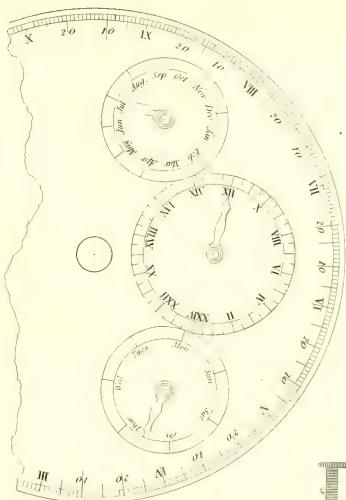
*Fig. 2*

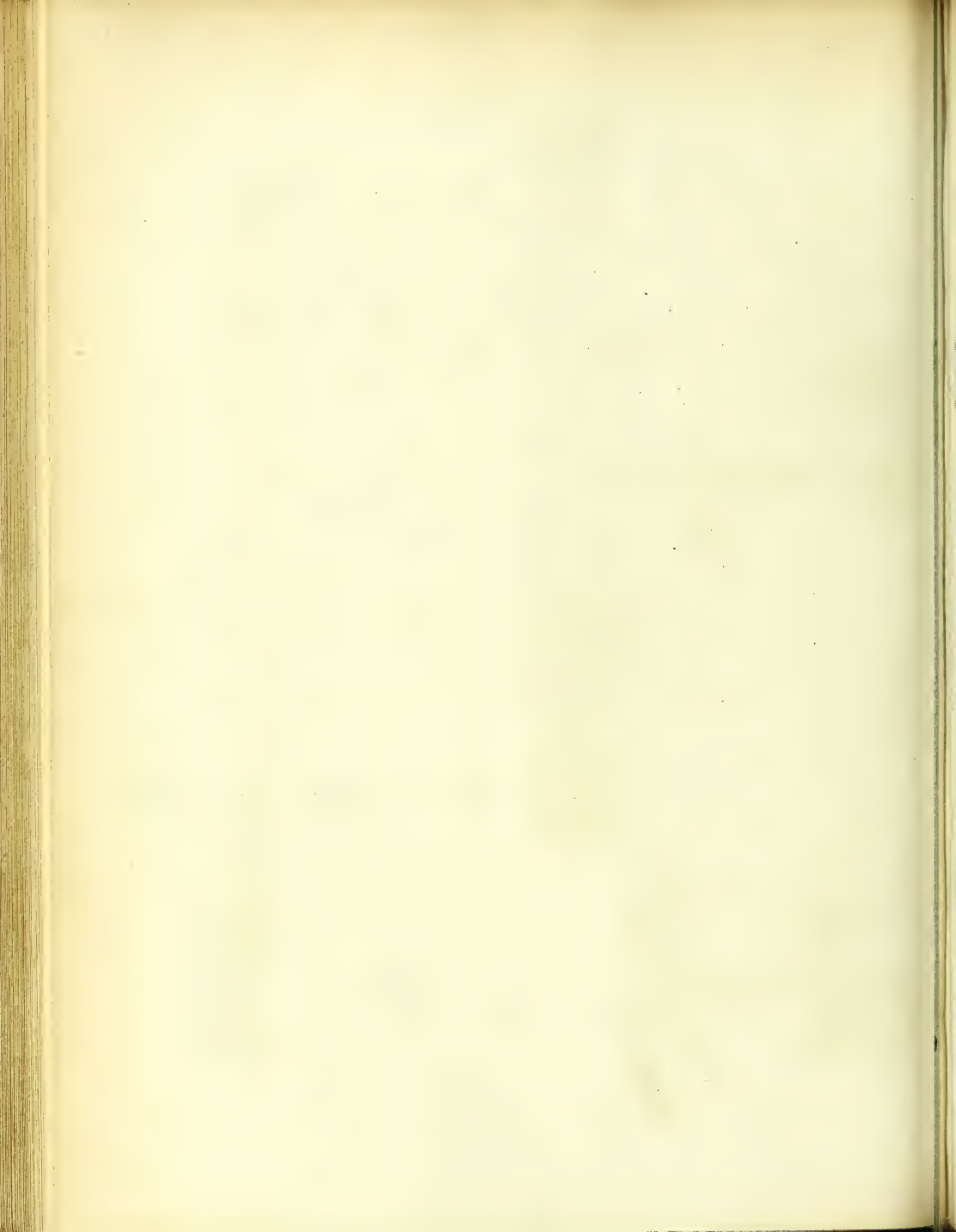
*Woodwork  
in the base*



*Fig. 3*

*Reduced Cover  
of the box*





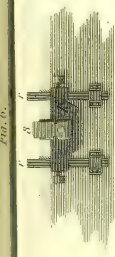


Fig. 6.

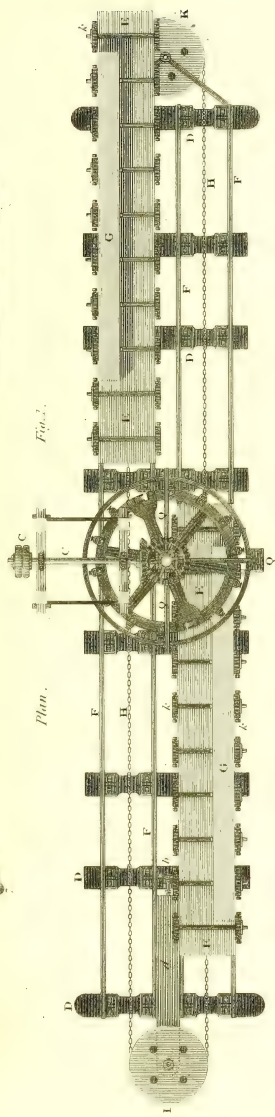


Fig. 2.

Plan.

Fig. 4.



Fig. 3.

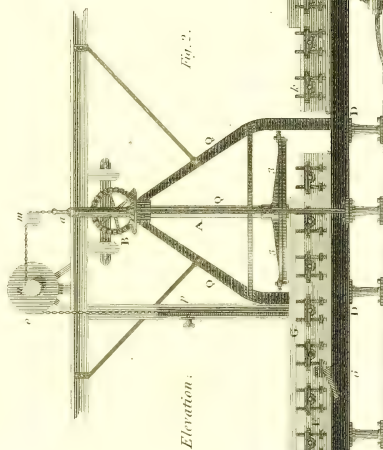
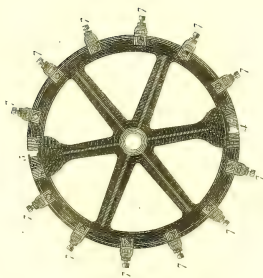


Fig. 2.

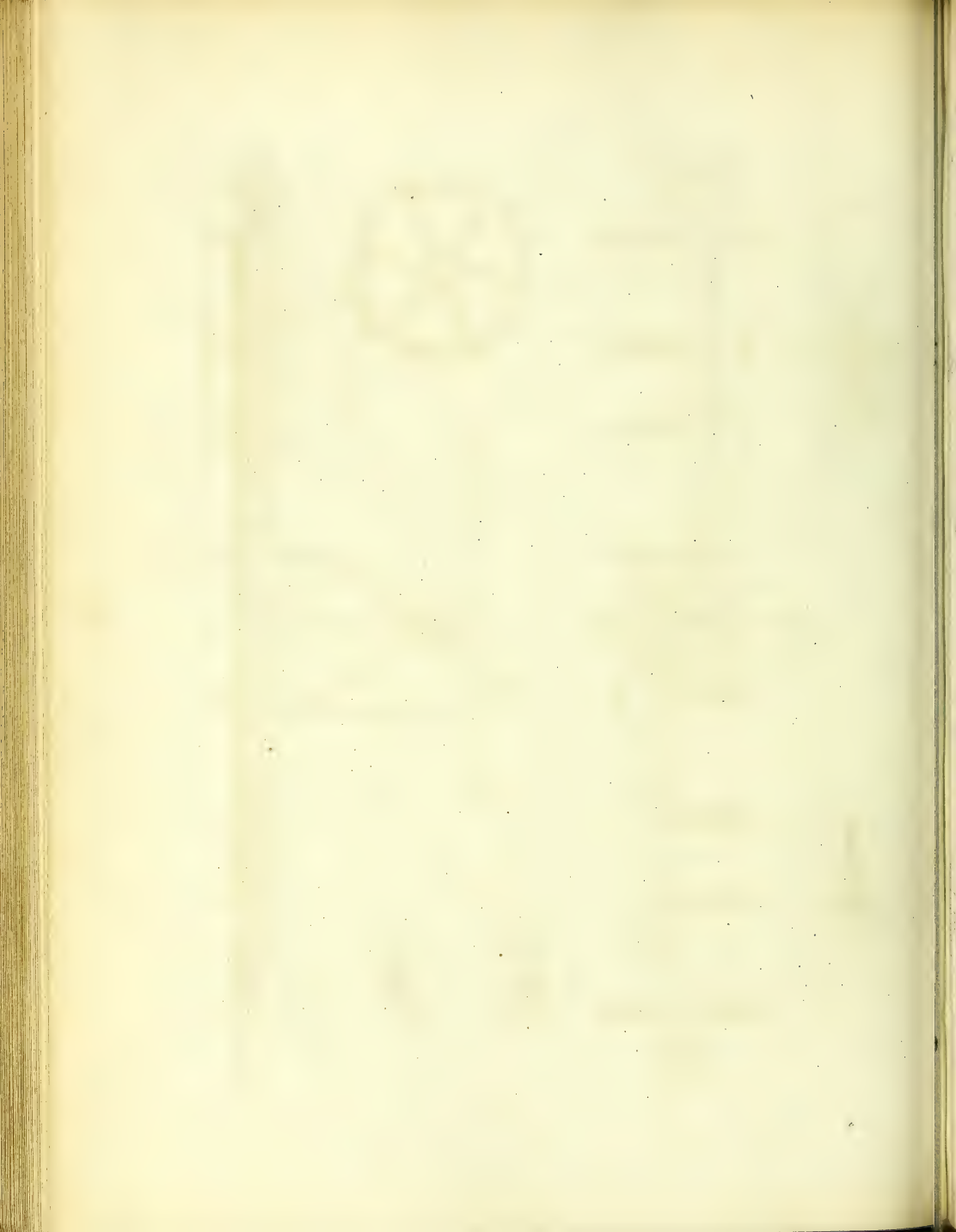
Elevation.

Fig. 5.



Published as the Act directs, by the Longman, Neale, Brown, & Co. Printers, Pall Mall.

H. Lacey sculp.





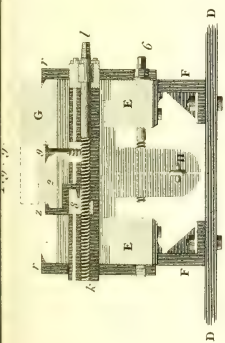
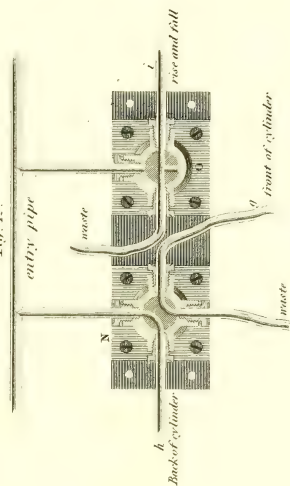


Fig. 12.



Cocks.  
Fig. 14.

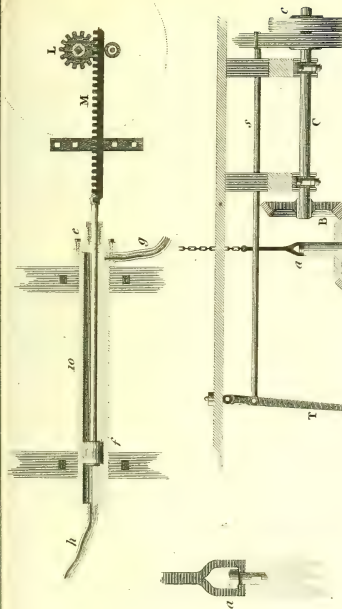
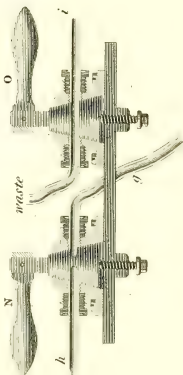
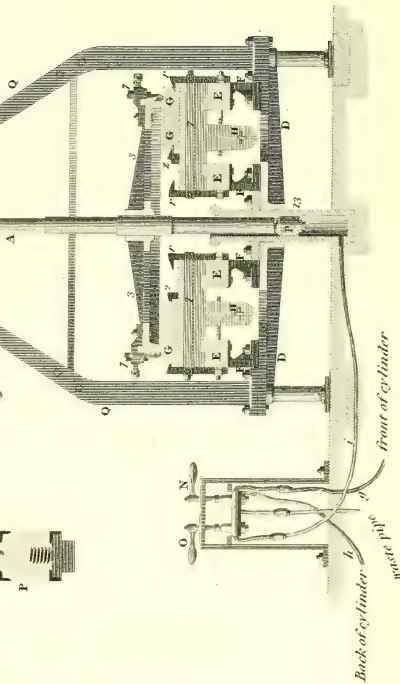


Fig. 15.



Cross Section  
Fig. 16.

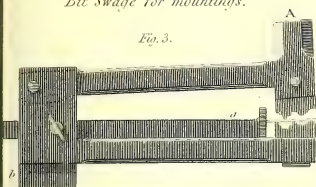




# PLATED MANUFACTURE.

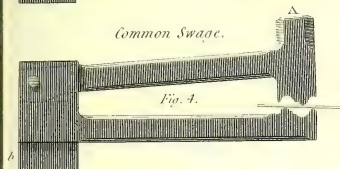
*Bit Swage for mountings.*

*Fig. 3.*

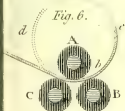


*Common Swage.*

*Fig. 4.*



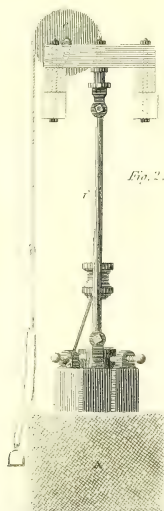
*Fig. 6.*



*Fig. 5.*

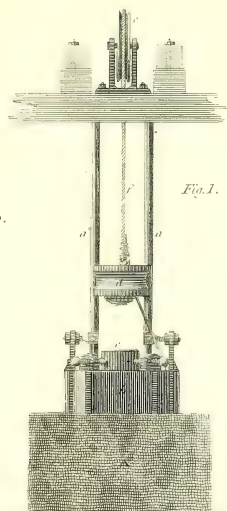


*Fig. 2.*



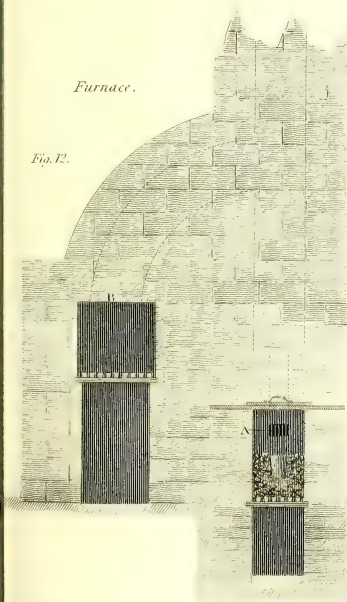
*Die Stamp.*

*Fig. 1.*



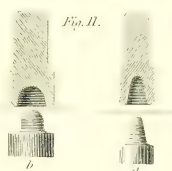
*Furnace.*

*Fig. 12.*

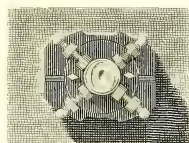


*Embossing Punches.*

*Fig. 11.*

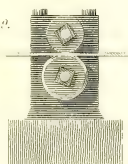


*Fig. 7.*

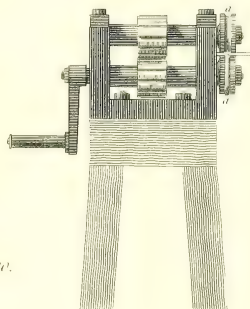


*Grooved Rollers for beads &c.*

*Fig. 9.*



*Fig. 8.*



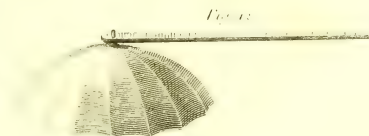
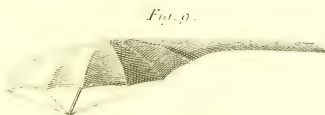
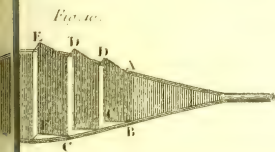
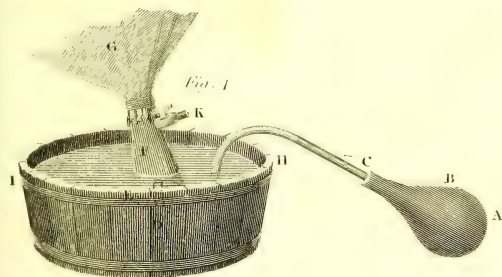
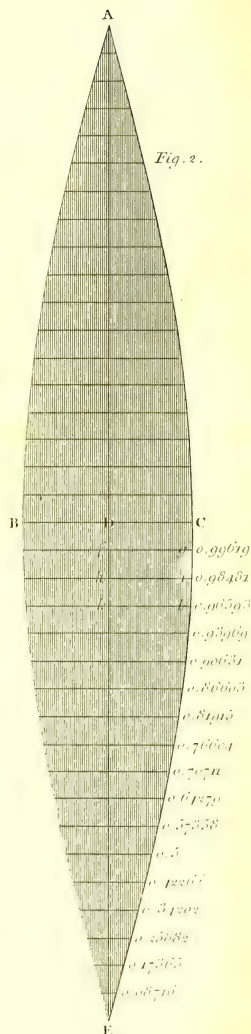
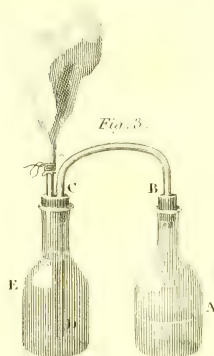
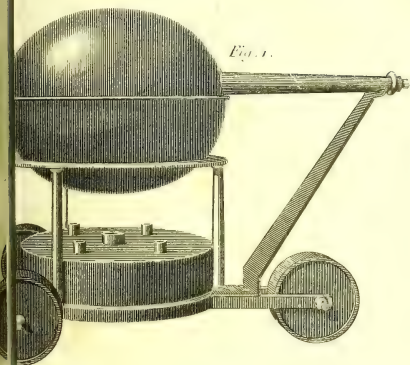
*Fig. 10.*



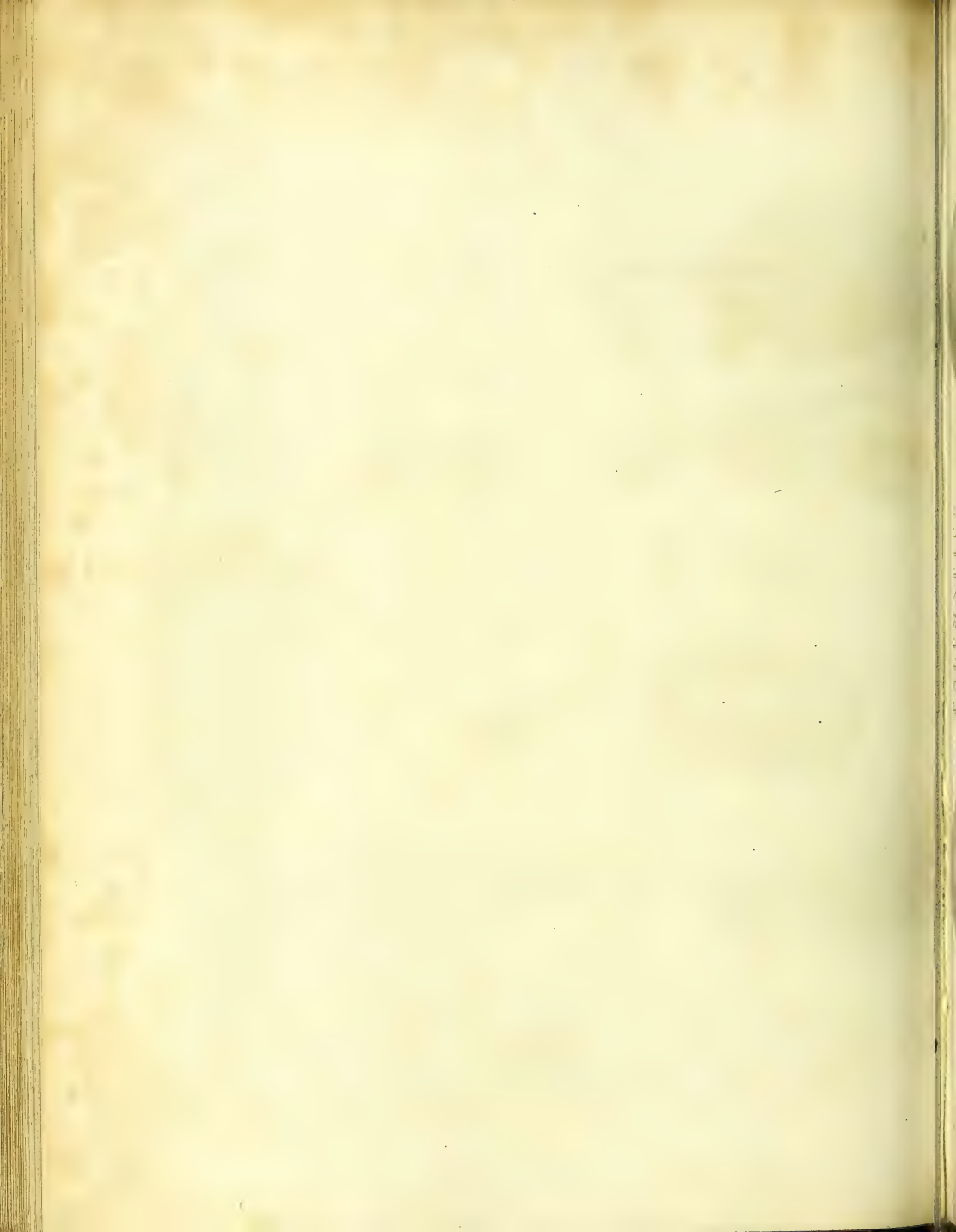


AEROSTATION

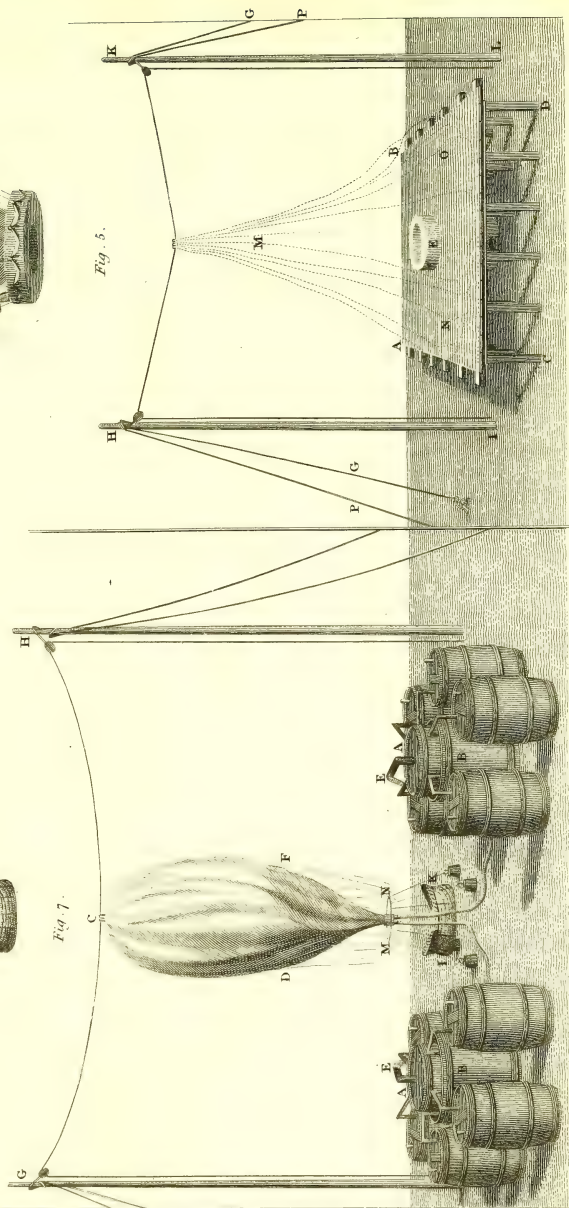
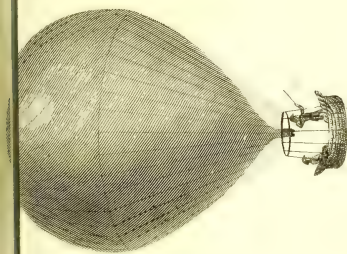
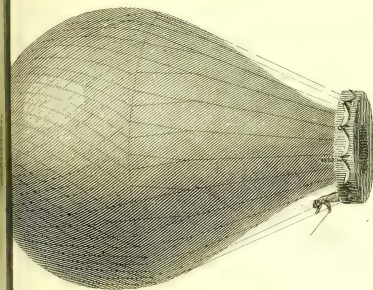
ÆOLIPYLE

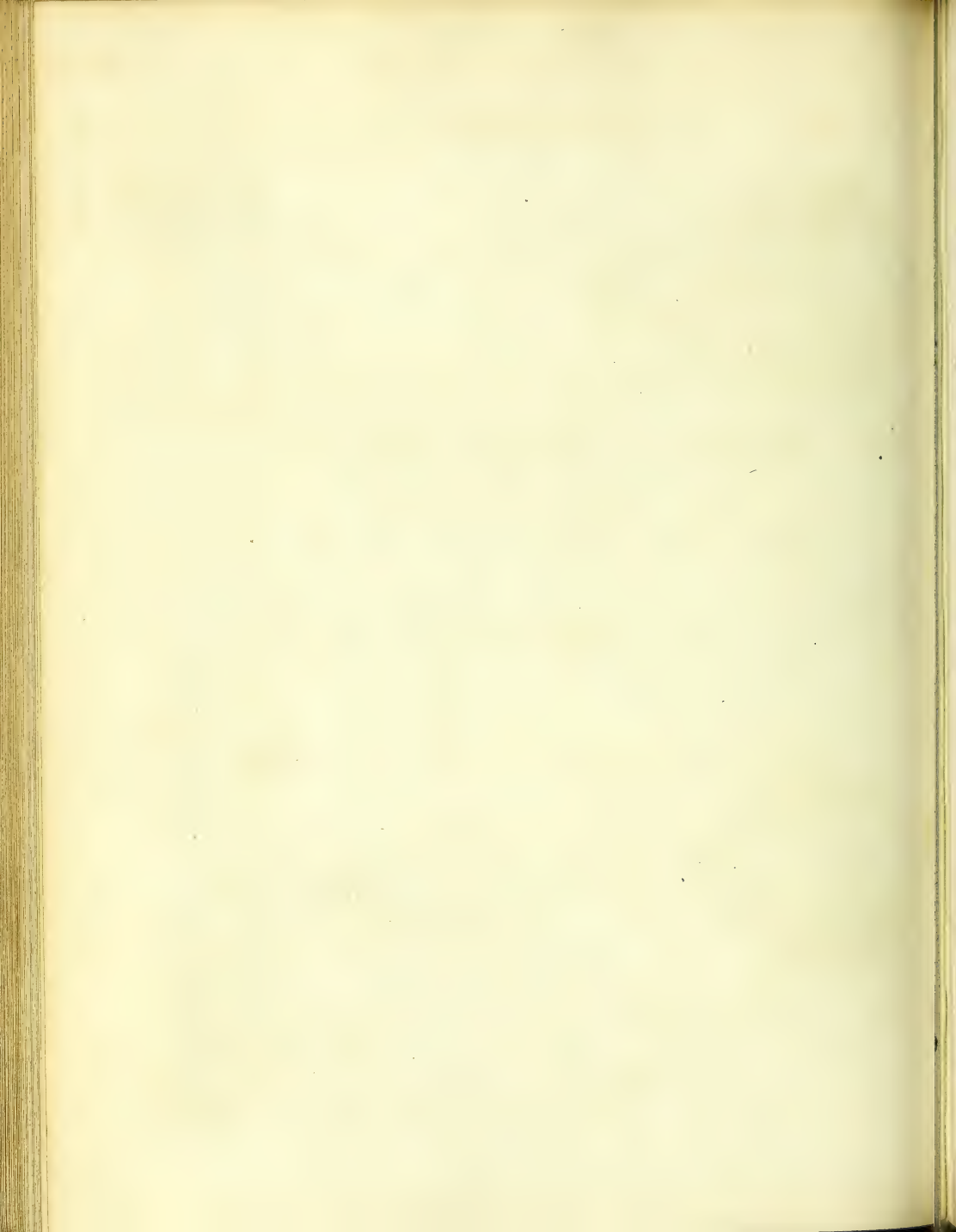


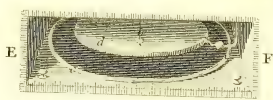
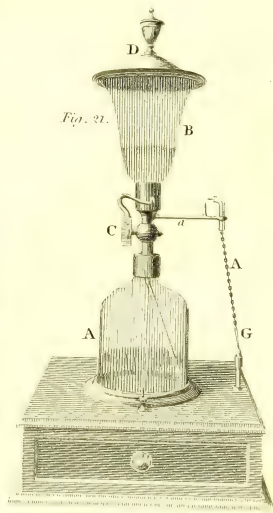
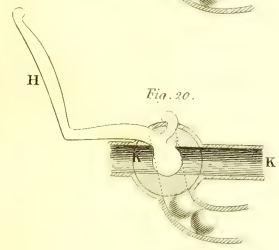
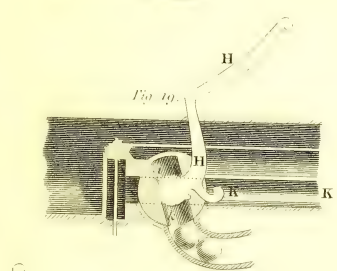
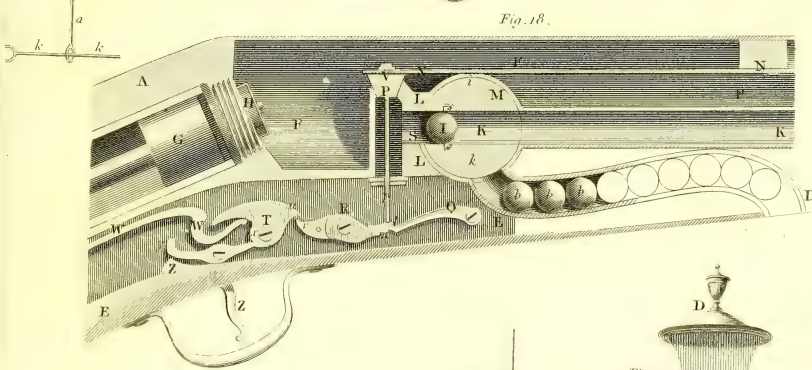
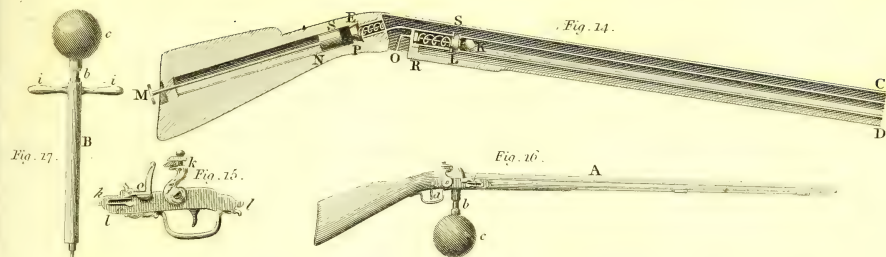




AEROSTATION.











AIR-Pump and Experiments on AIR.

Fig. B.



Fig. A.

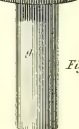


Fig. C.

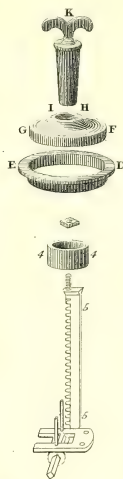
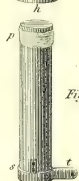


Fig. 26.  
Plate I.

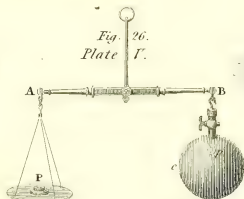


Fig. 25.

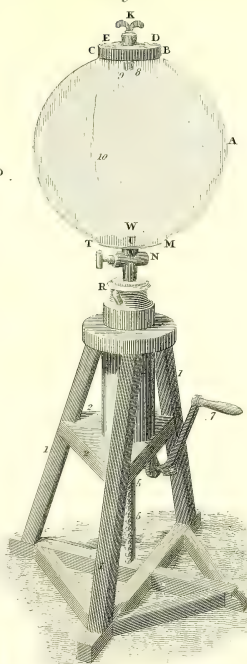


Fig. 24.

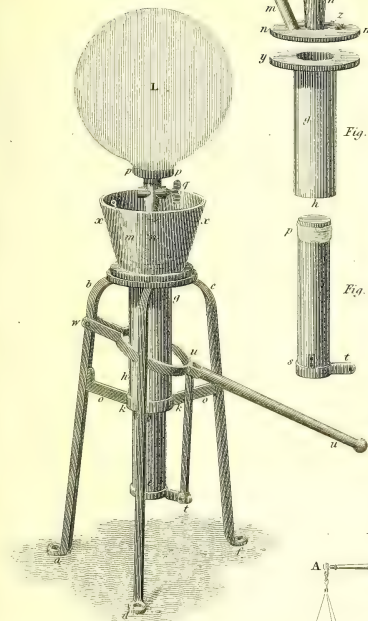


Fig. 27.



Fig. 28.



Fig. 30.



Fig. 31.



Fig. 32.

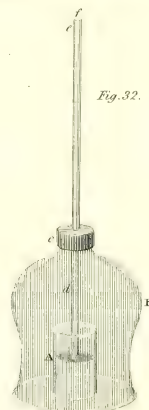


Fig. 29.



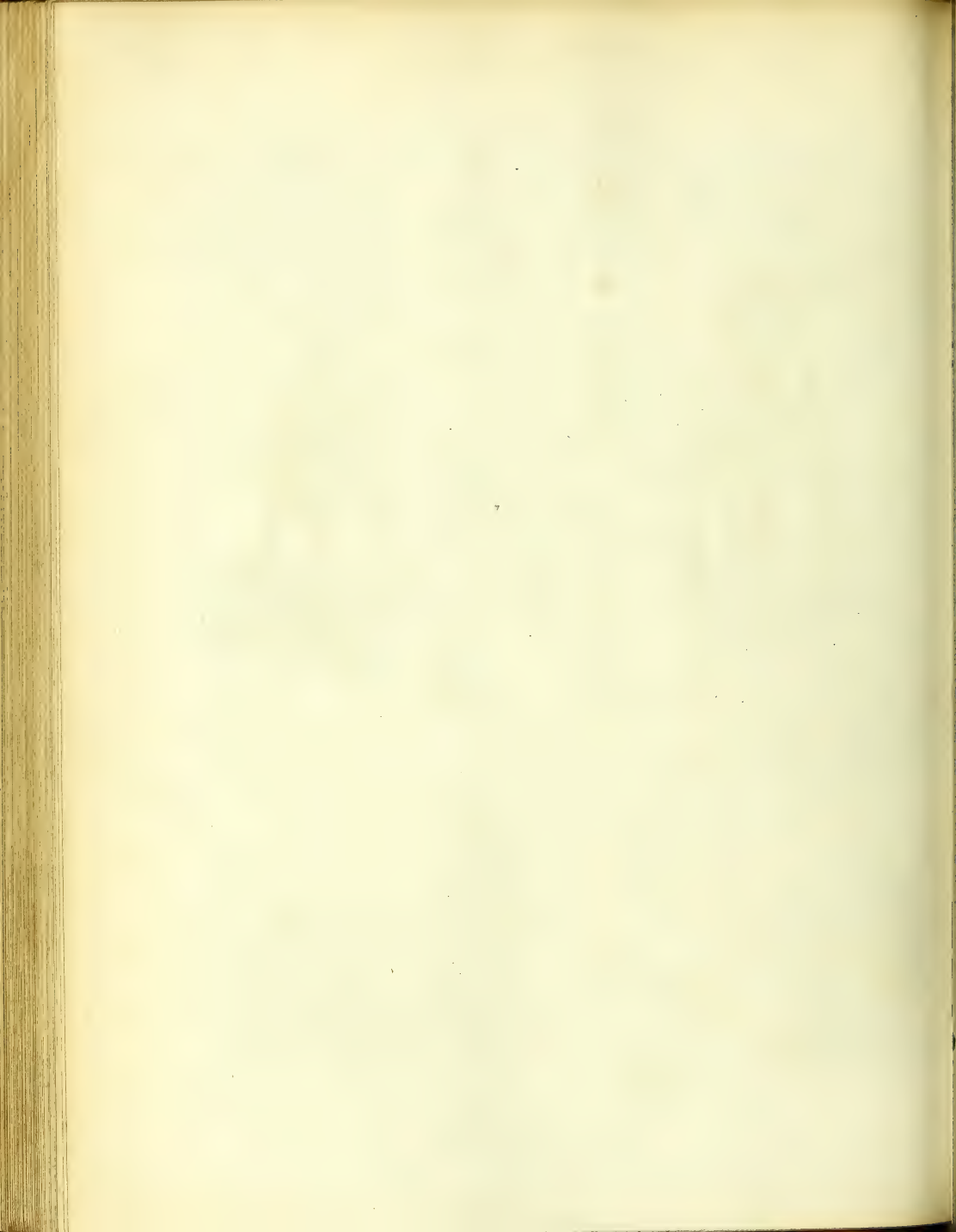


Fig. 35.

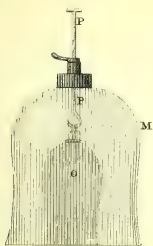


Fig. 36.



Fig. 37.

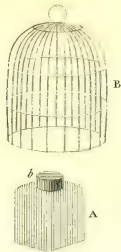


Fig. 39.

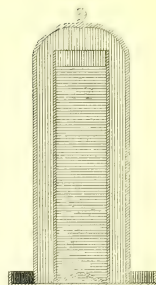


Fig. 38.

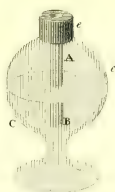


Fig. 33.

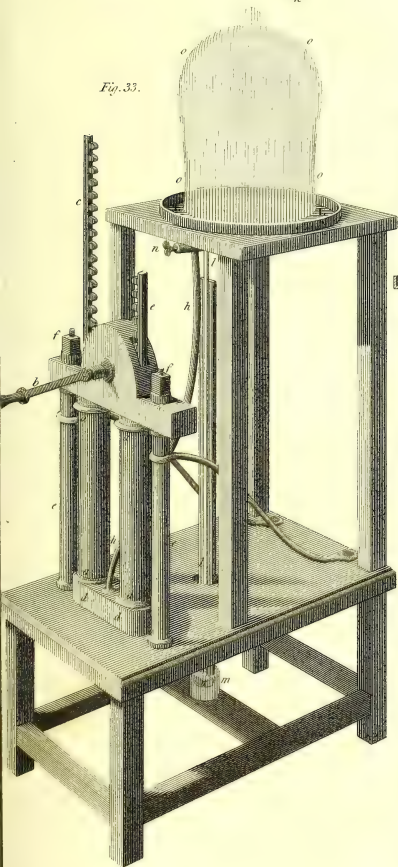


Fig. 40.

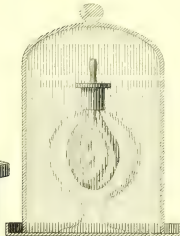


Fig. 42.

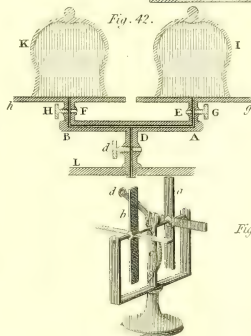


Fig. 43.

Fig. 41.

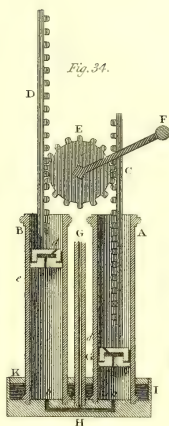


Fig. 34.

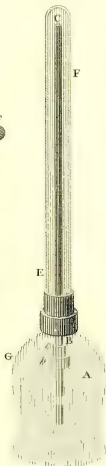


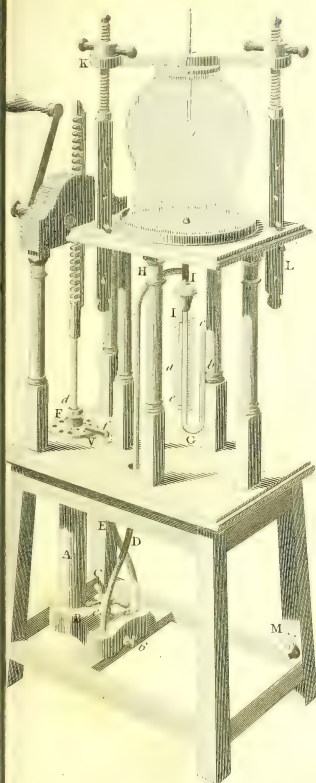
Fig. 44.





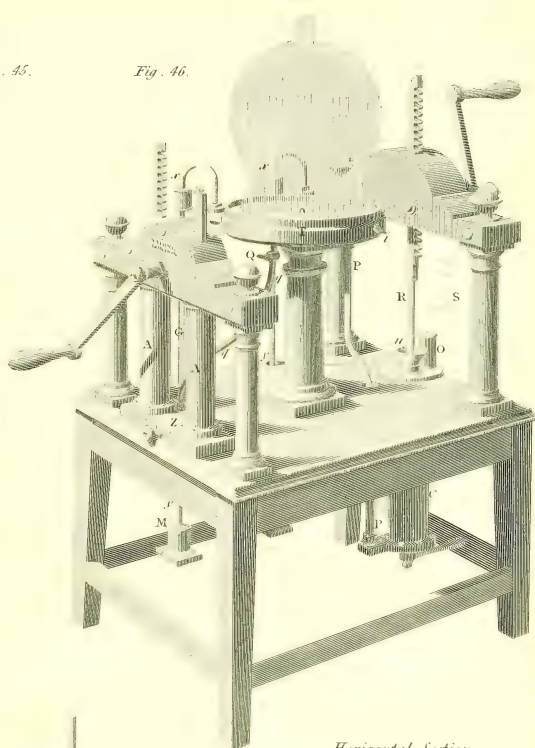
AIR PUMP.

*Smoot's*



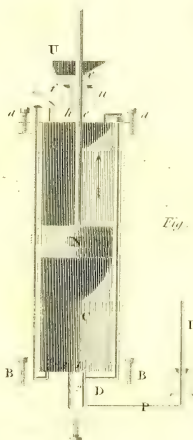
*Fig. 45.*

*Nairne's*



*Fig. 46.*

*Fig. B.B.*



*Fig. 47.*

*Horizontal Section*



*Fig. A.A.*





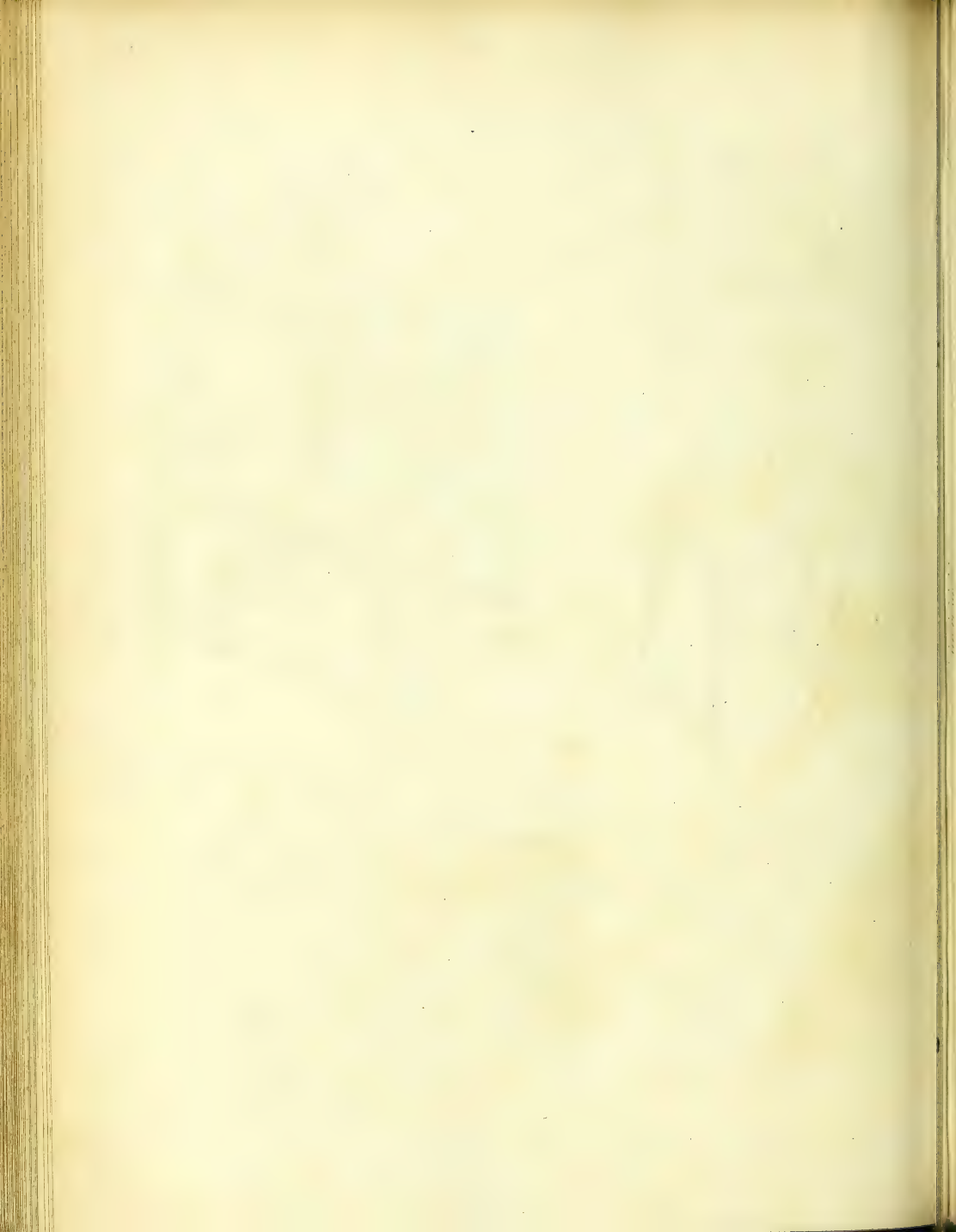


Fig. 48.

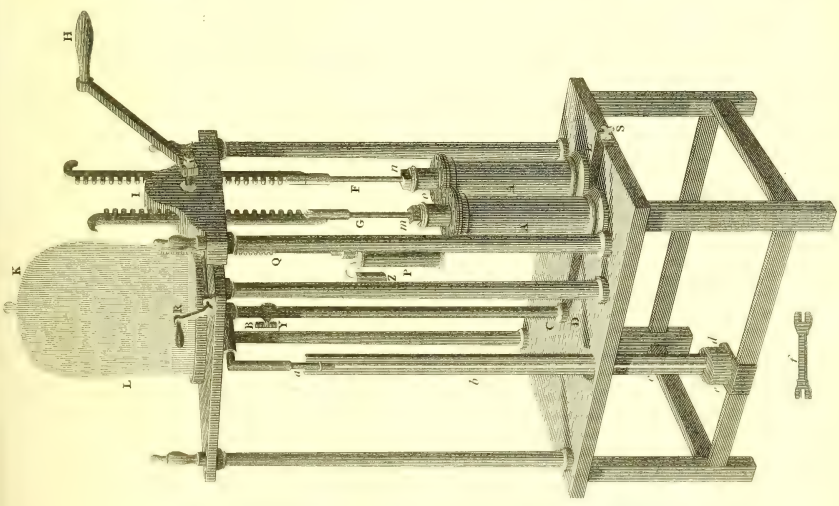


Fig. 55.

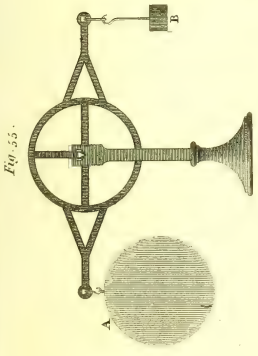


Fig. 54.

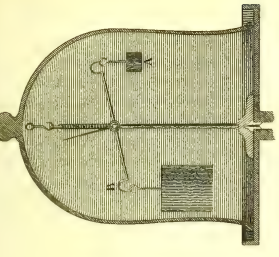


Fig. 49.

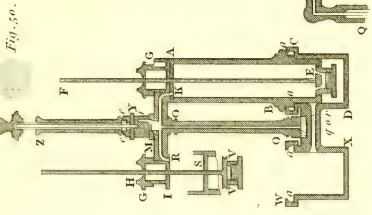


Fig. 50.

Fig. 52.

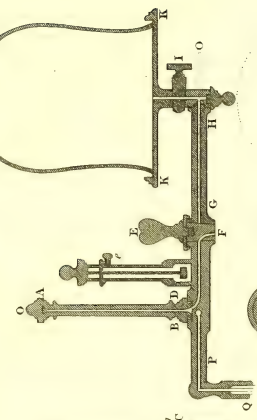
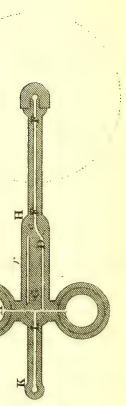
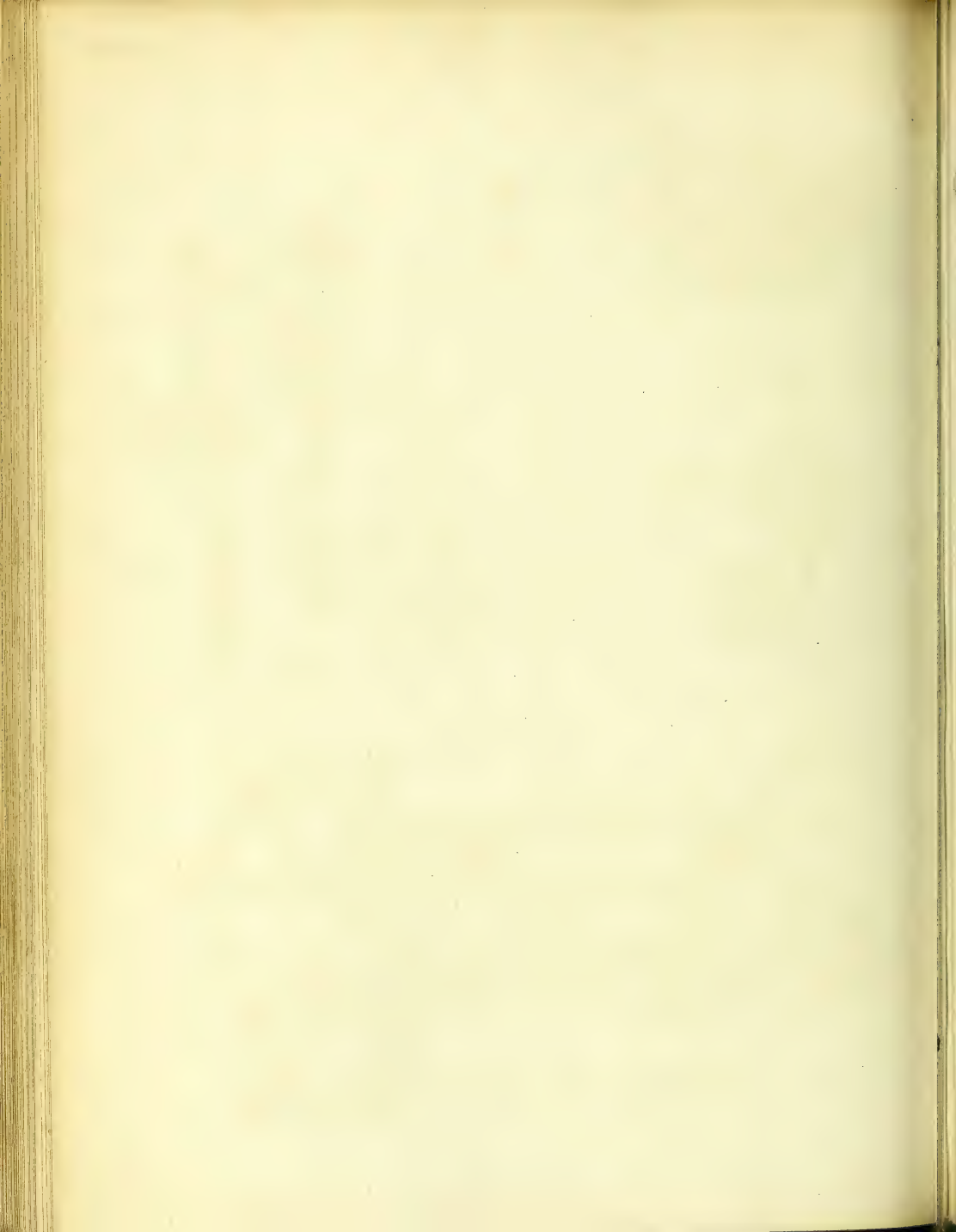


Fig. 53.





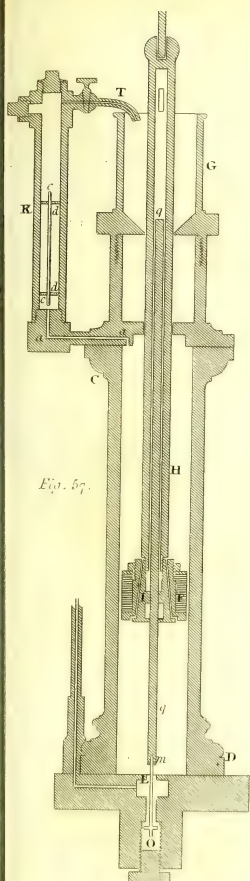


Fig. 57.

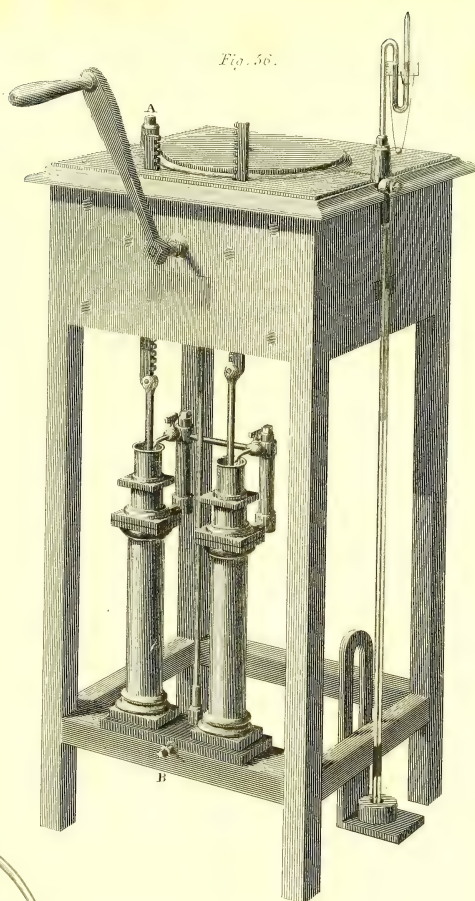


Fig. 56.

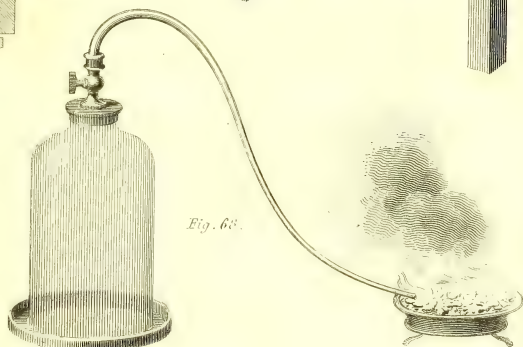
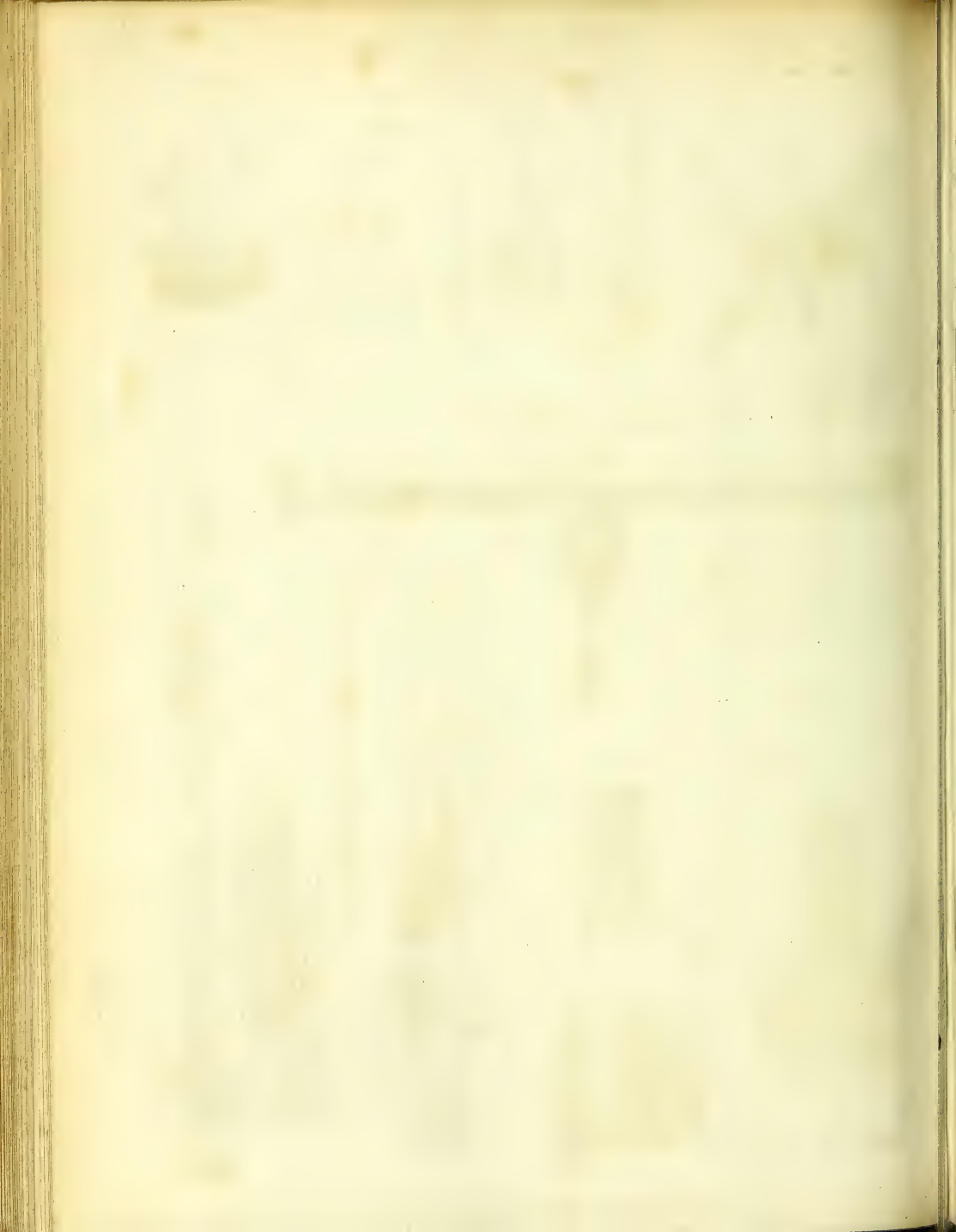
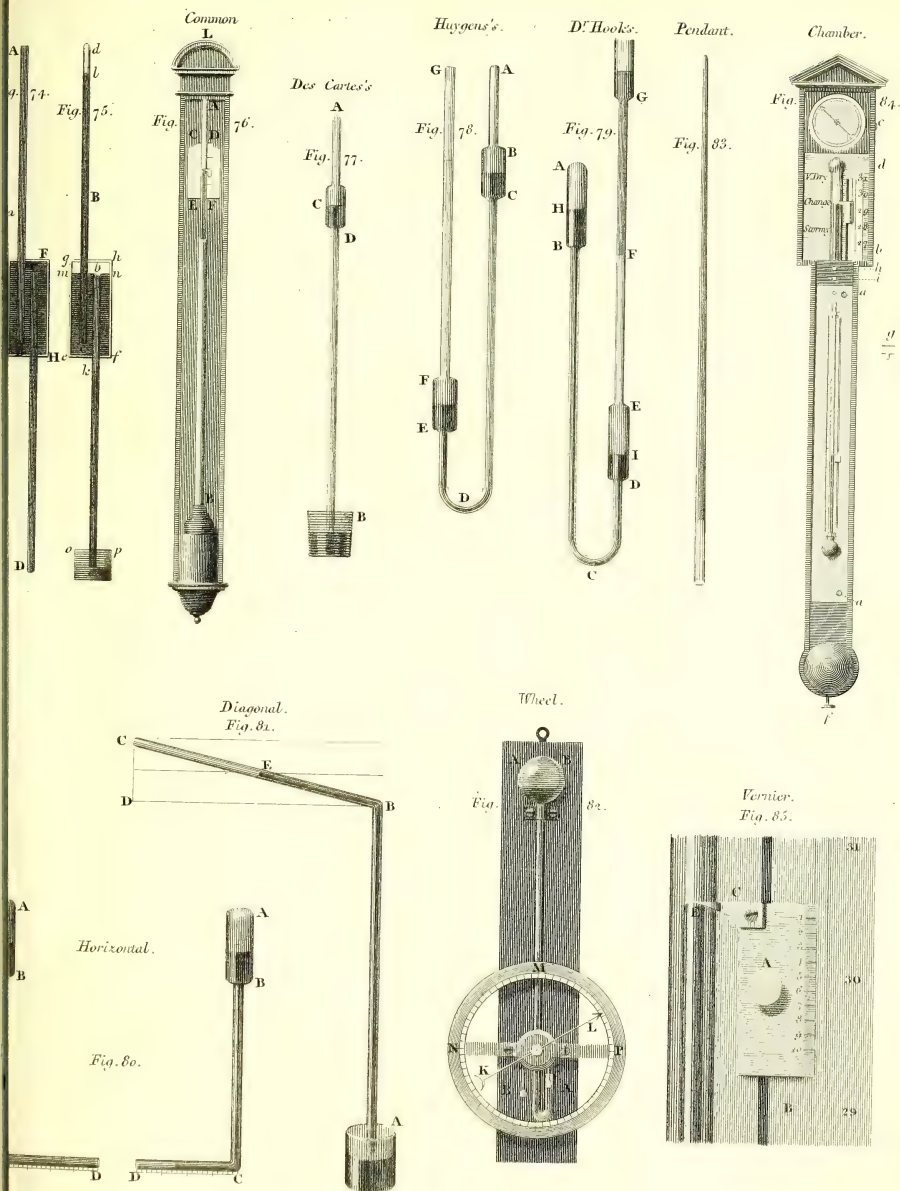


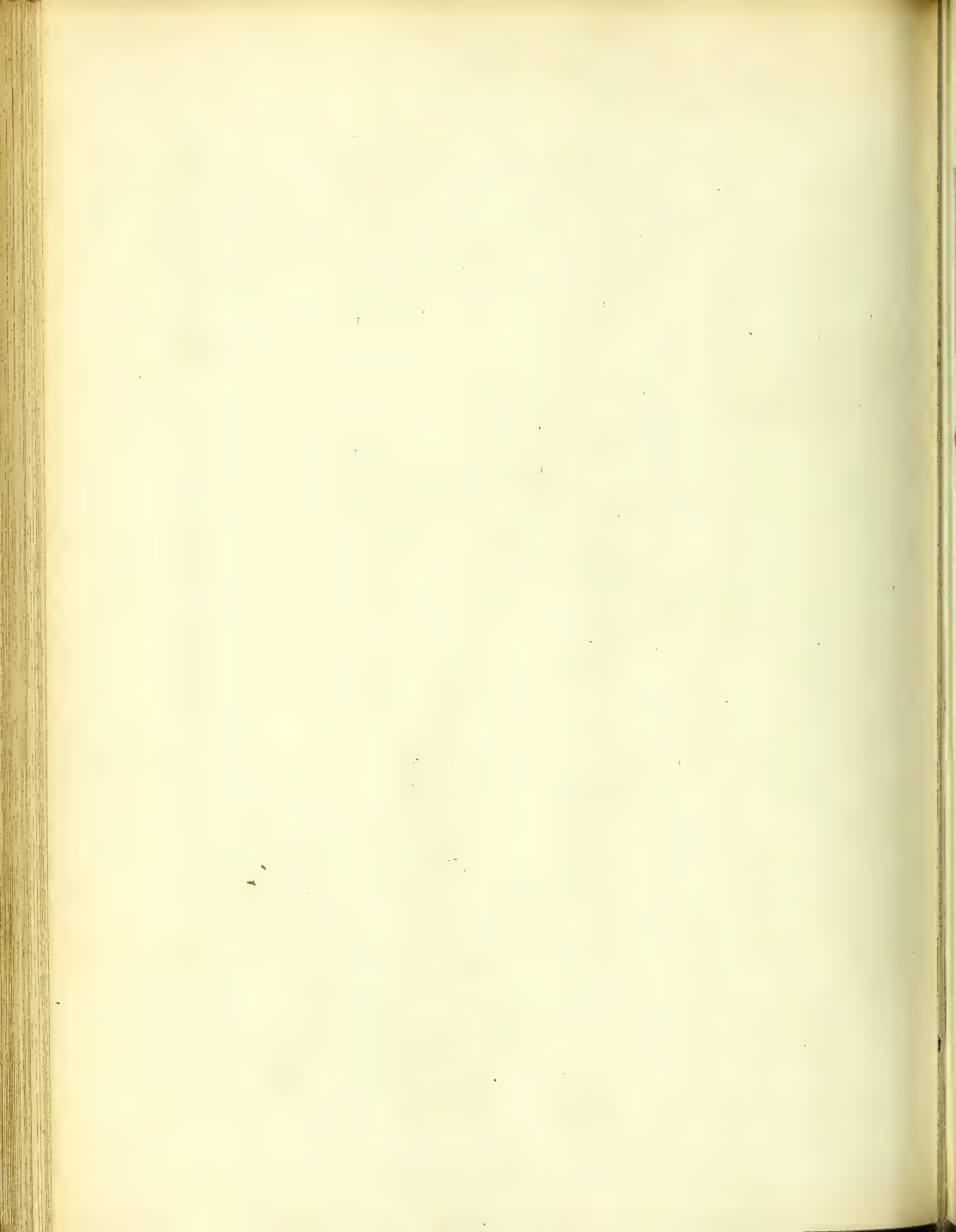
Fig. 68.





BAROMETER.





BAROMETER.

Marine

Fig. 87.

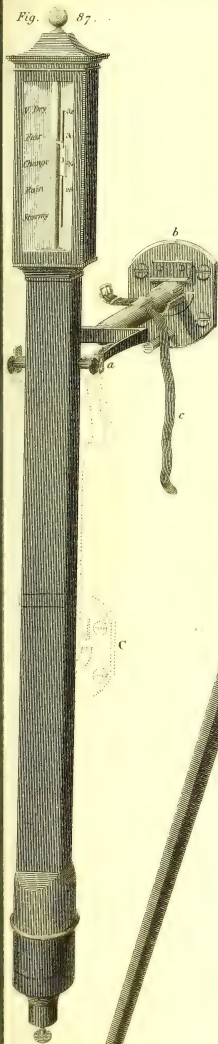
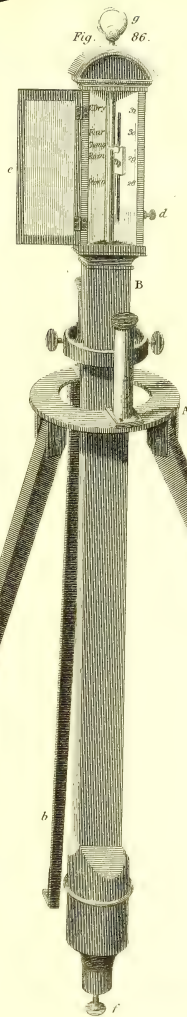
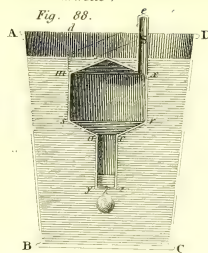


Fig. 86.



Gaswell's.  
Fig. 88.



Rowning's.

Fig. 89.



Rowning's.

Fig. 90.

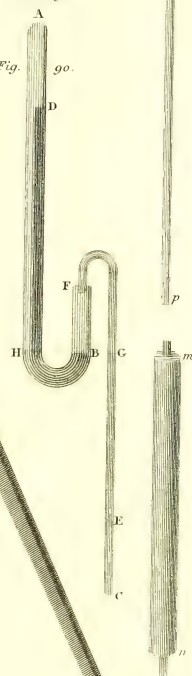






Fig. 91.

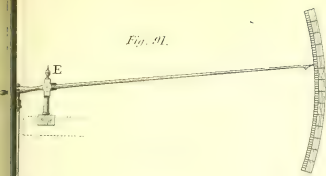
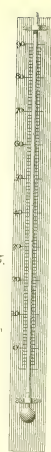
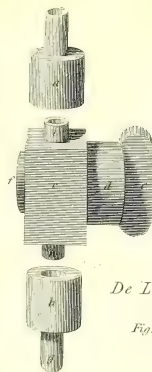


Fig. 95.



De Luc's.

Fig. 94.



Keith's.

Fig. 92.

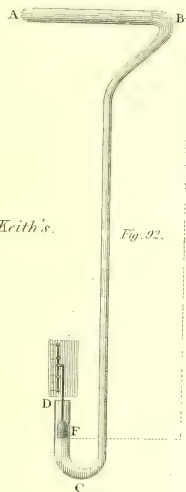


Fig. 93.



Hamilton's.

Fig. 96.



Fig. 97.

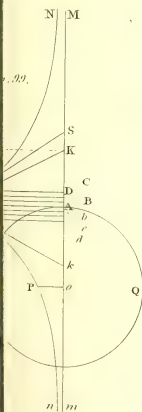
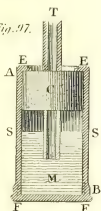
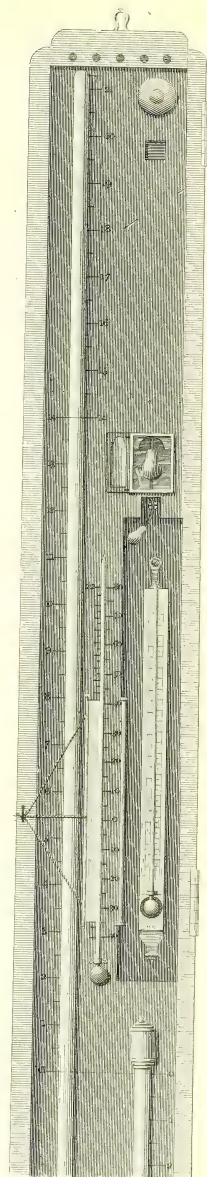
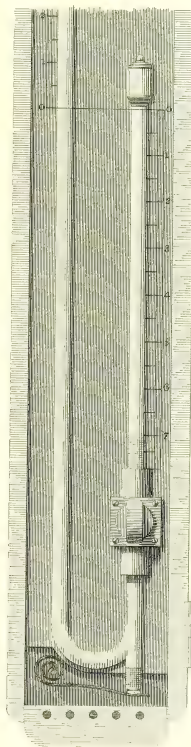
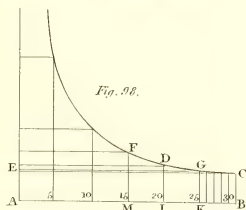


Fig. 98.







BAROMETER.

Fig. 104.

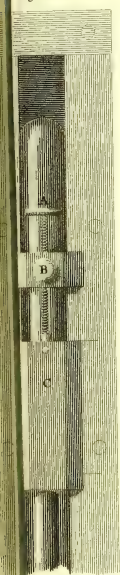


Fig. 105.

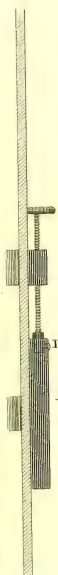


Fig. 102.

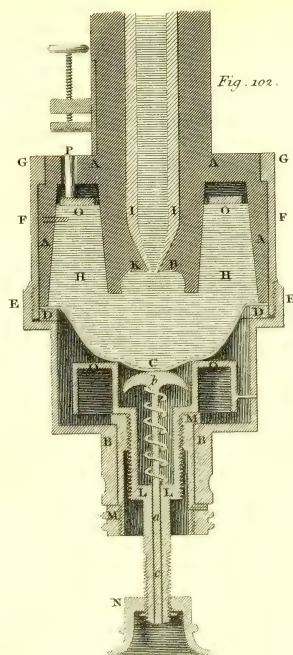


Fig. 101.

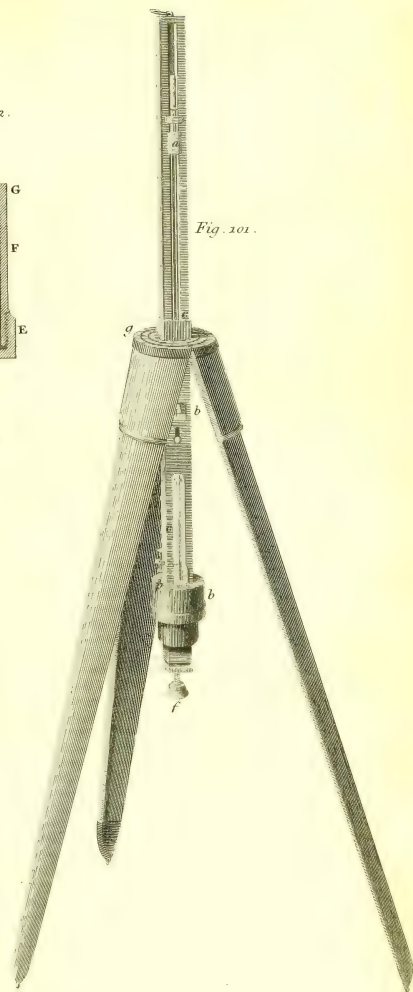


Fig. 103.

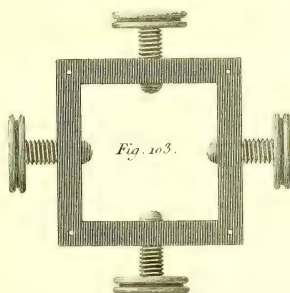


Fig. 100.





Fig. 107.

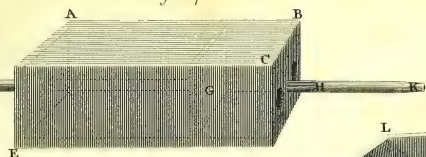


Fig. 109.

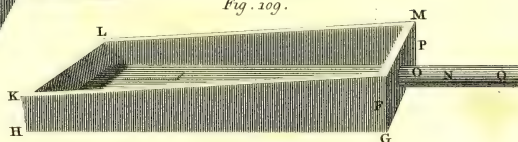


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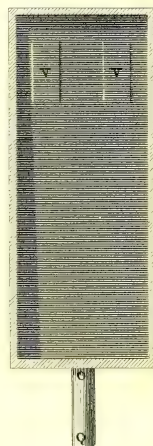


Fig. 108.

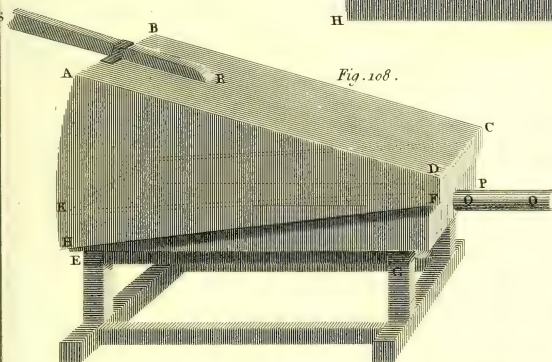


Fig. 111.

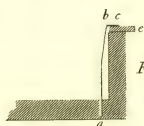


Fig. 112.

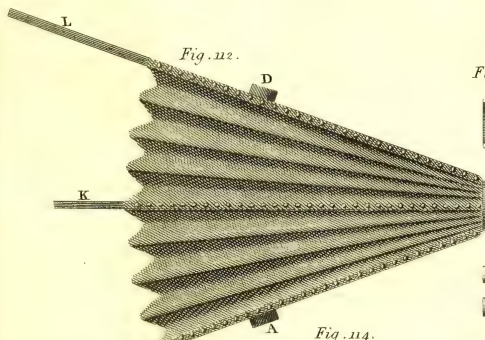


Fig. 117.



Fig. 116.



Fig. 115.

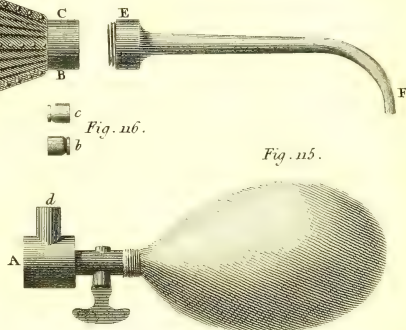


Fig. 113.



Fig. 114.

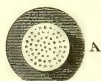
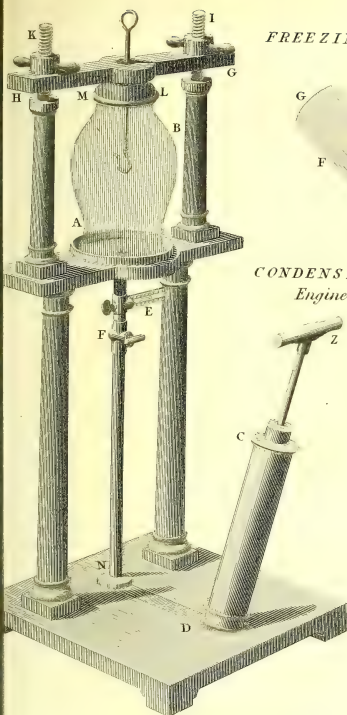




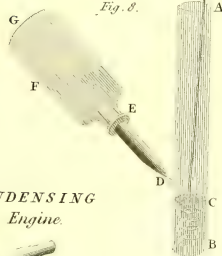


Fig. 3.



FREEZING Apparatus.

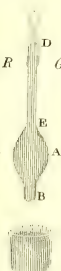
Fig. 8.



CONDENSING Engine.

PEAR Gage.

Fig. 4.

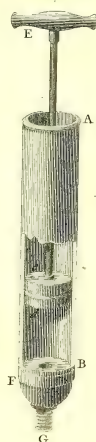


CONDENSER'S.

Fig. 2.



Fig. 1.



GAGE of Condenser.

Fig. 6.

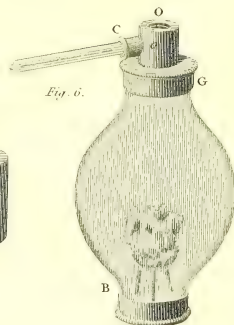


Fig. 7.



Fig. 6.

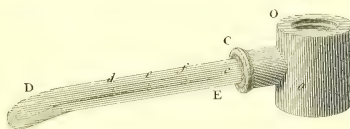
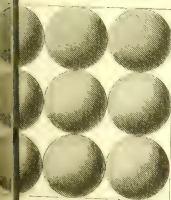


Fig. 4.



FREEZING.

Fig. 5.

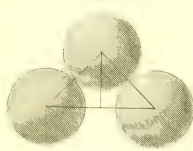


Fig. 6.

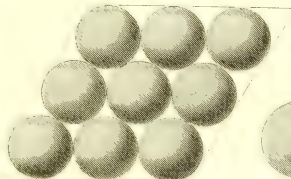


Fig. 7.

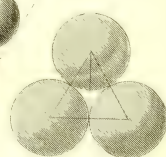




Fig. 1.



Fig. 2.

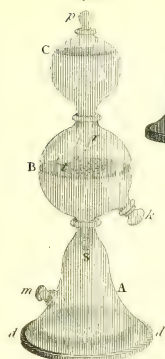


Fig. 3.



Fig. 6.



Fig. 4.



Fig. 6.

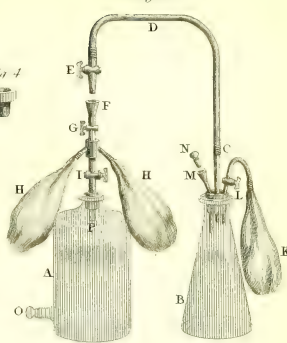
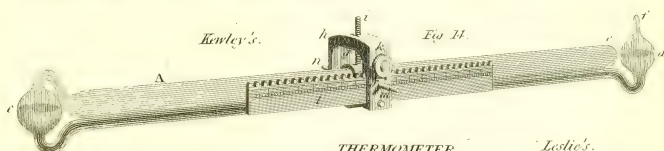


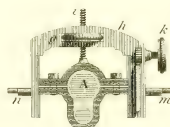
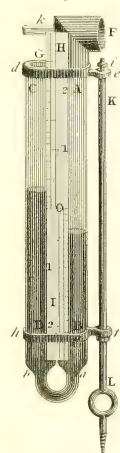
Fig. 7.



THERMOMETER.

Lind's WIND GAGE.

Fig. 9.



Leslie's.

Fig. 13.



Martin's WIND GAGE.

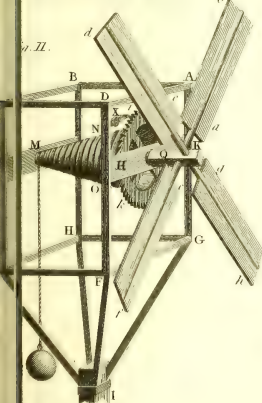


Fig. 11.



WHISPERING PLACE.

Fig. 8.

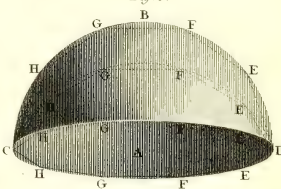


Fig. 12.



Bouguer's WIND GAGE





*THERMOMETER.*

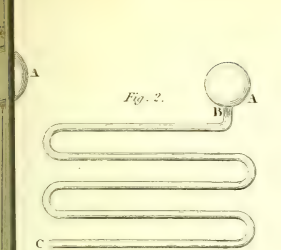
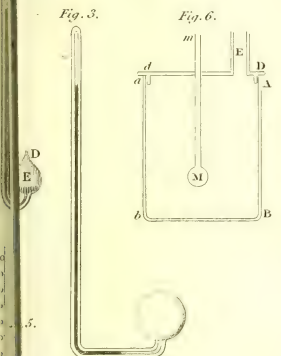


Fig. 2.



*Fig. 3.*

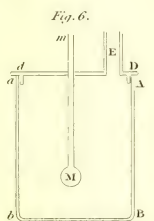
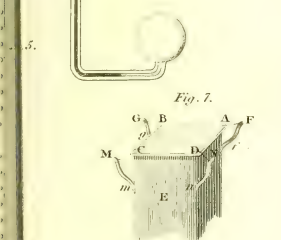
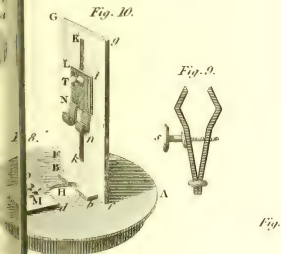


Fig. 6.



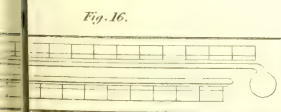
*Fig. 7.*



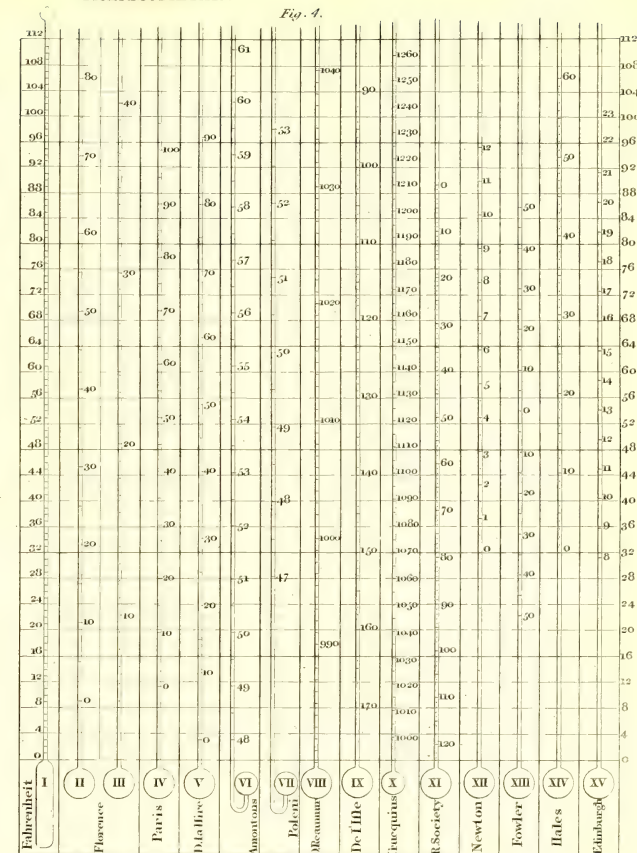
*Fig. 10.*



*Fig. 9.*



*Fig. 16.*



*Fig. 4.*

*Height of Barometer.*

Fig. 11.

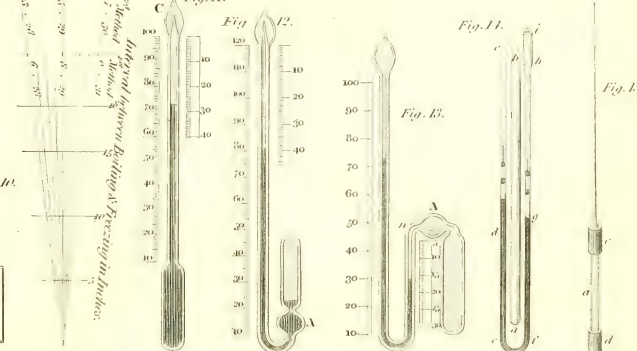


Fig. 15.





# PNEUMATICS. VENTILATOR.

PLATE XVII.

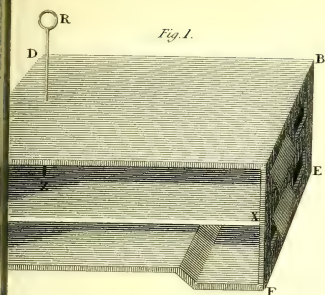


Fig. 1.

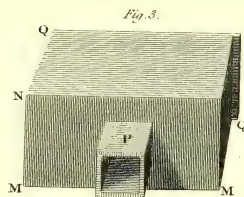


Fig. 3.

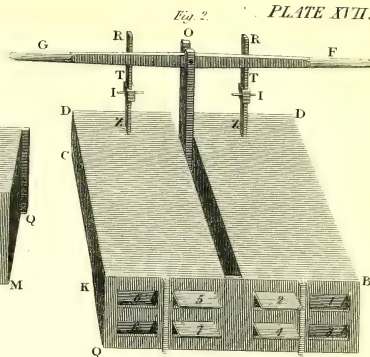


Fig. 2.

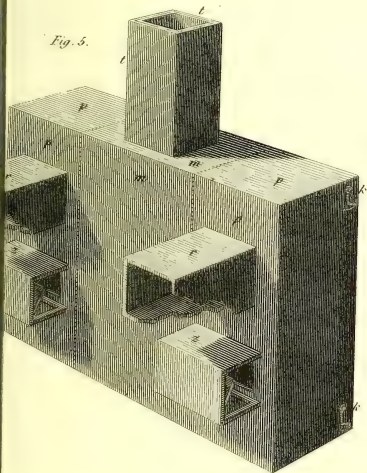


Fig. 5.

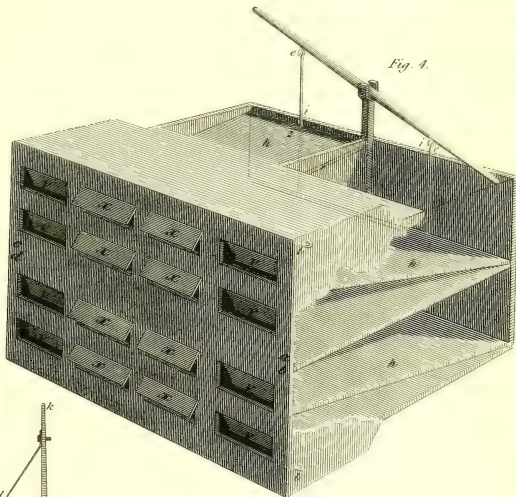


Fig. 4.

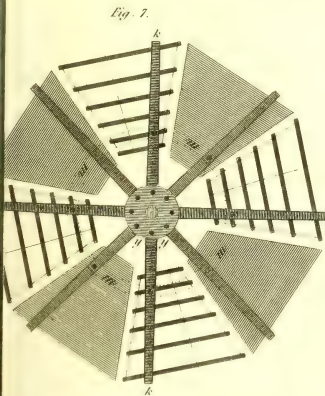


Fig. 7.

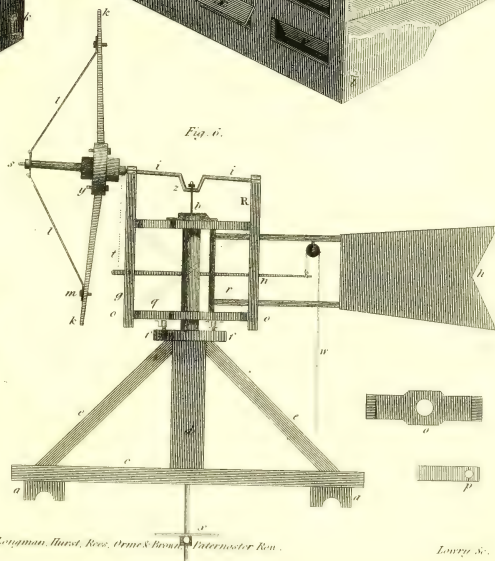
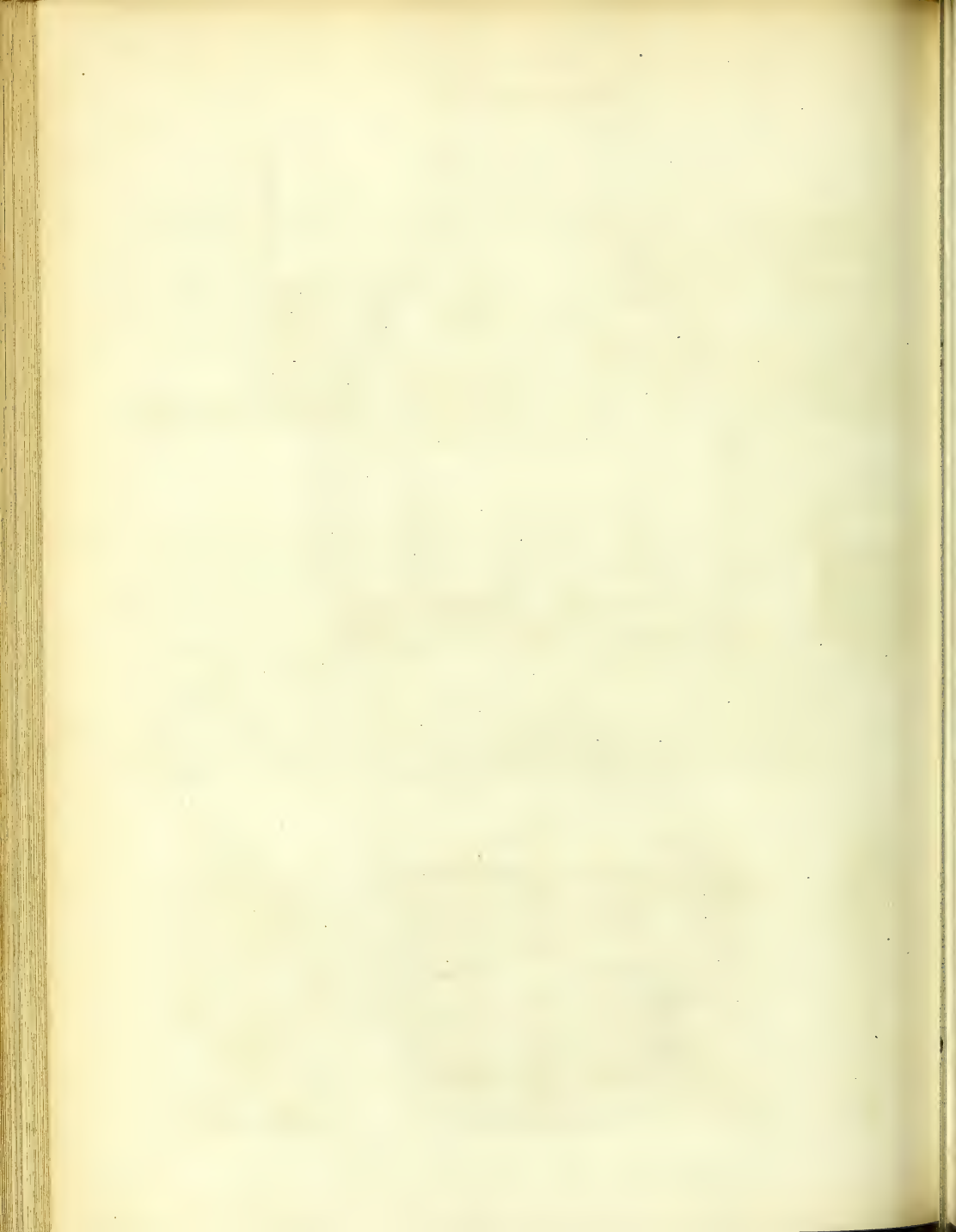
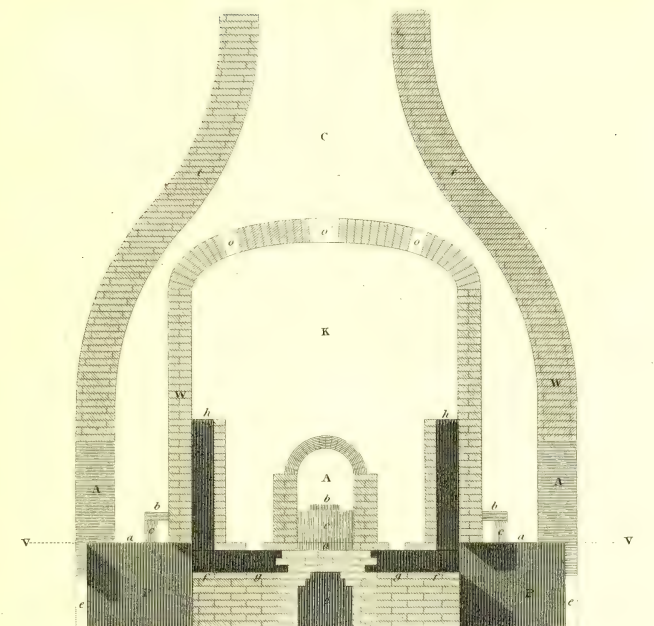


Fig. 6.

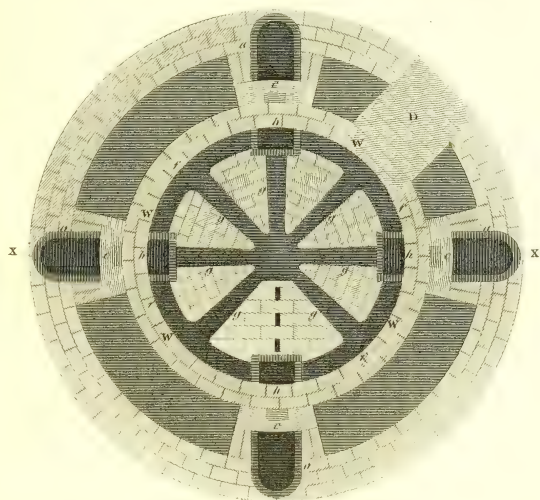


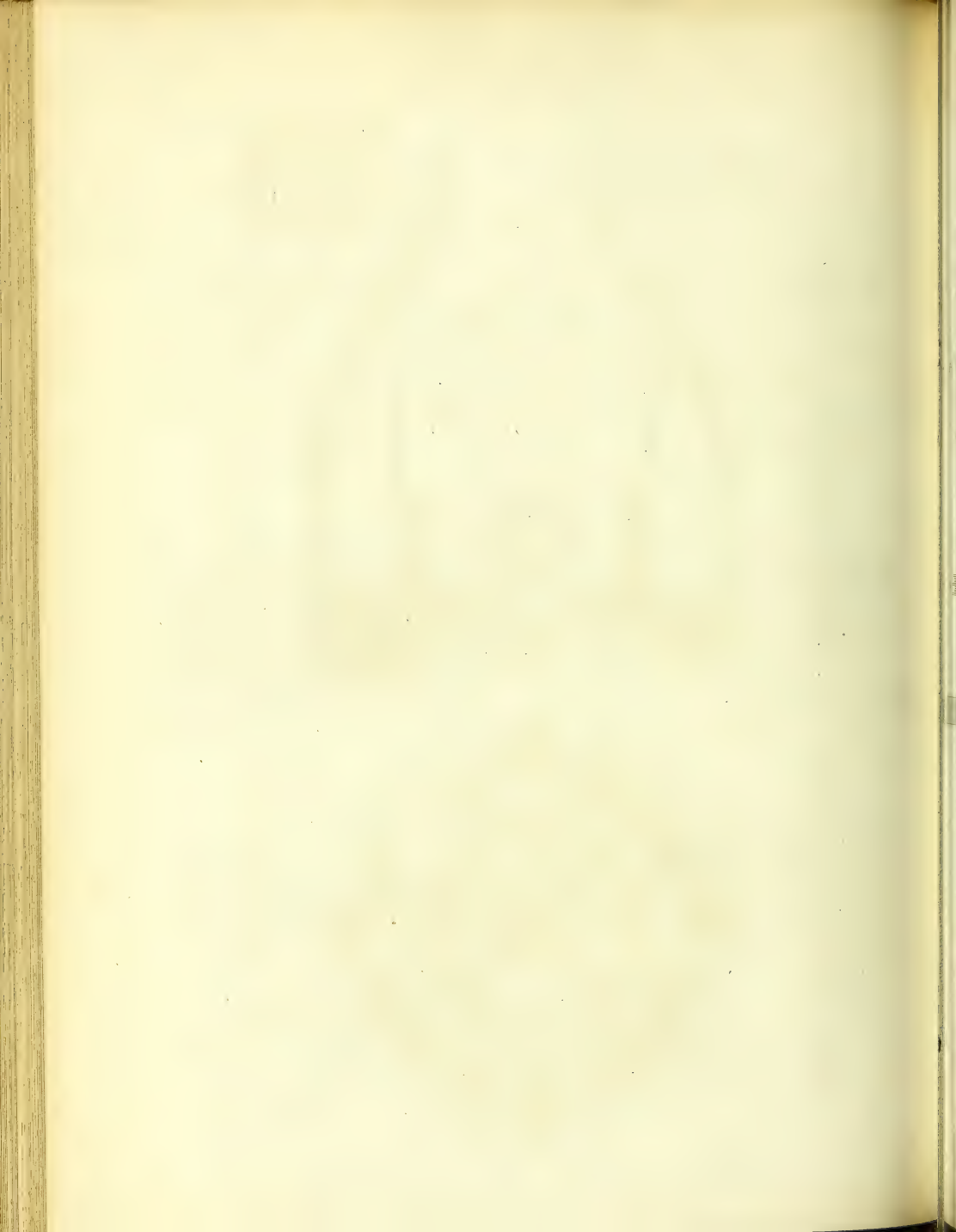
# POTTERY

*Vertical Section.*



*Horizontal Section*







# PRESS.

## M<sup>r</sup> BRAMAH'S HYDROSTATIC PRESS.

Fig. 3. Plan.

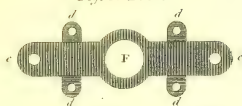
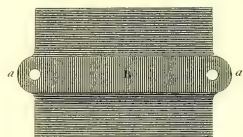
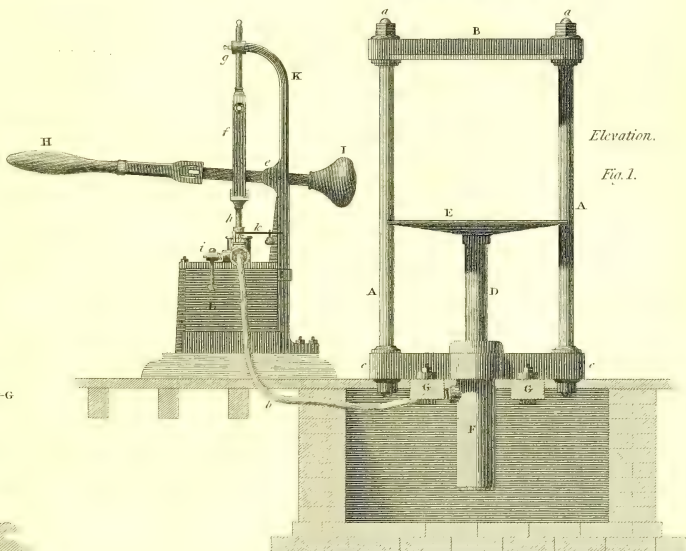


Fig. 4. Plan.



Elevation.

Fig. 1.



Sections of the

Fig. 5.

Cylinder

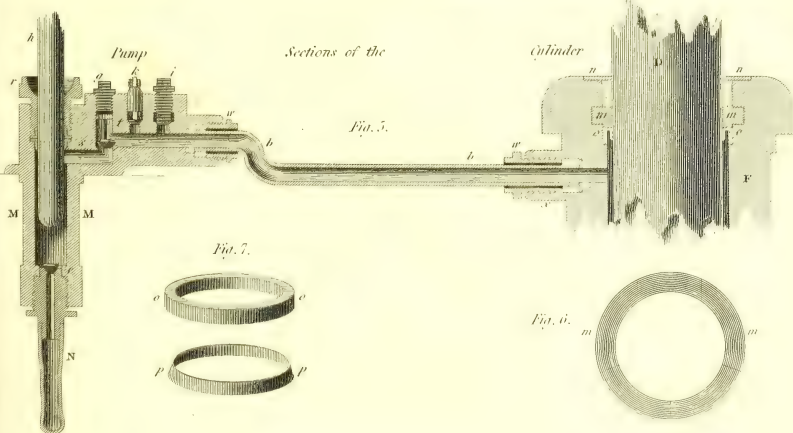


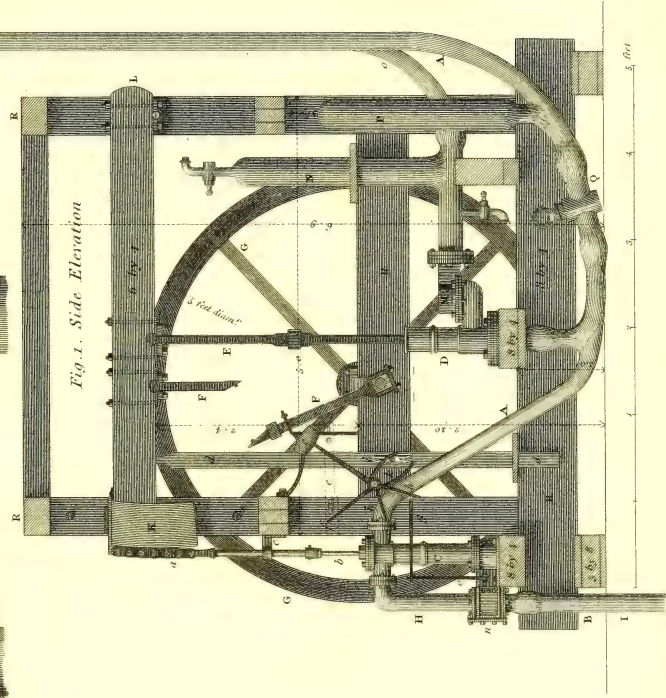
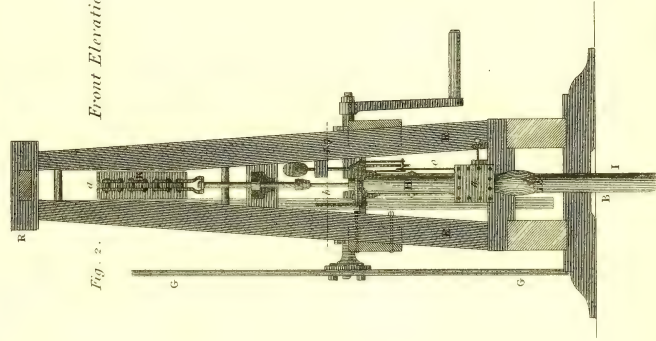
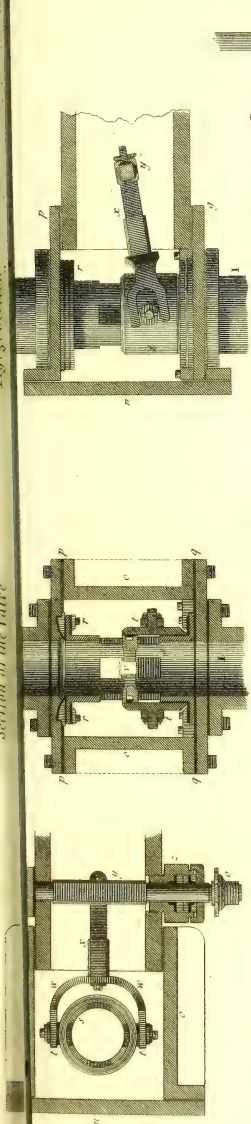
Fig. 7.



Fig. 6.







J. Ewing delin.

Published as the Act directs 1862 by Longman, Broad, Way, Orme & Brown, Paternoster Row.

Engraved by W. Lowry.





# PRINTING

PLATE I.

The STANHOPE or IRON PRESS.

Fig. 1. Elevation

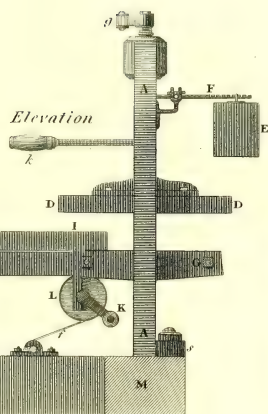


Fig. 2.

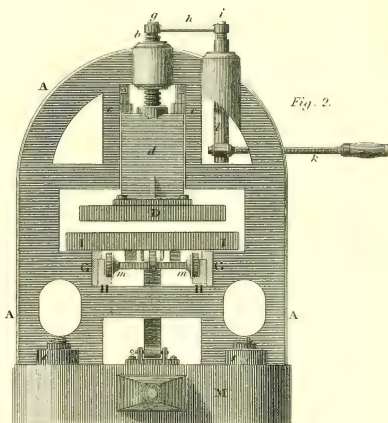


Fig. 3. Plan

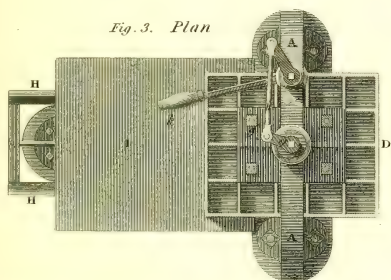


Fig. 4. Section

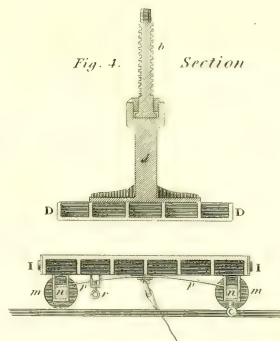


Fig. 6.

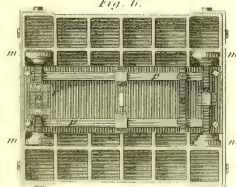
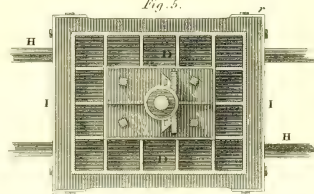
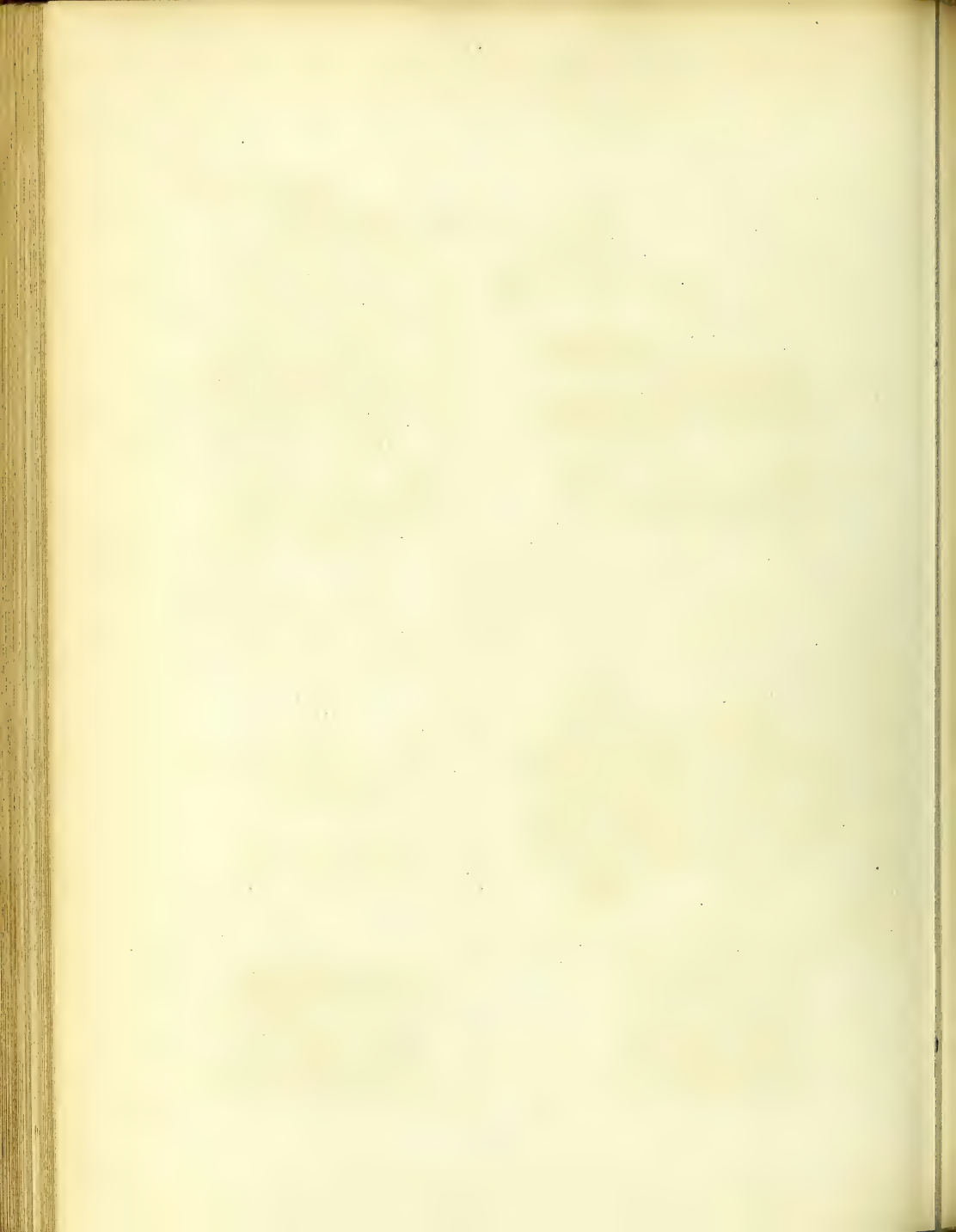


Fig. 5.

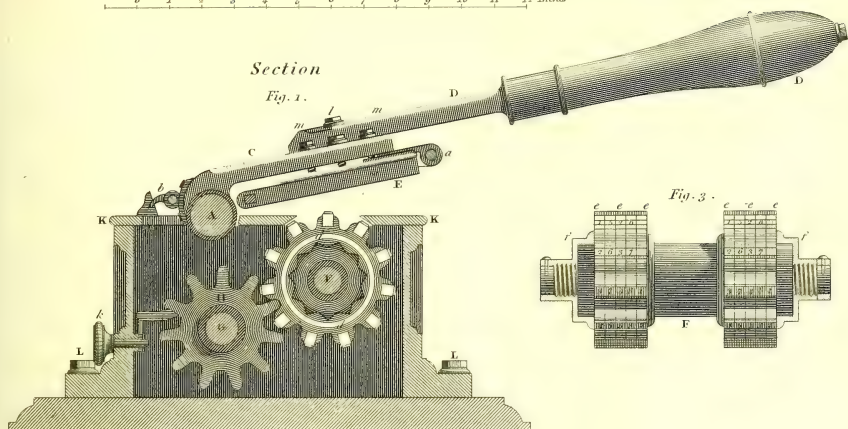
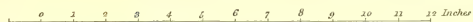




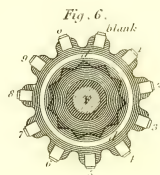
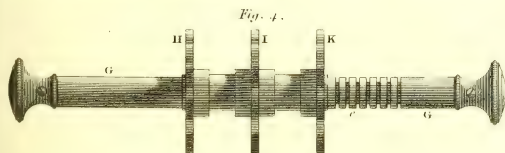
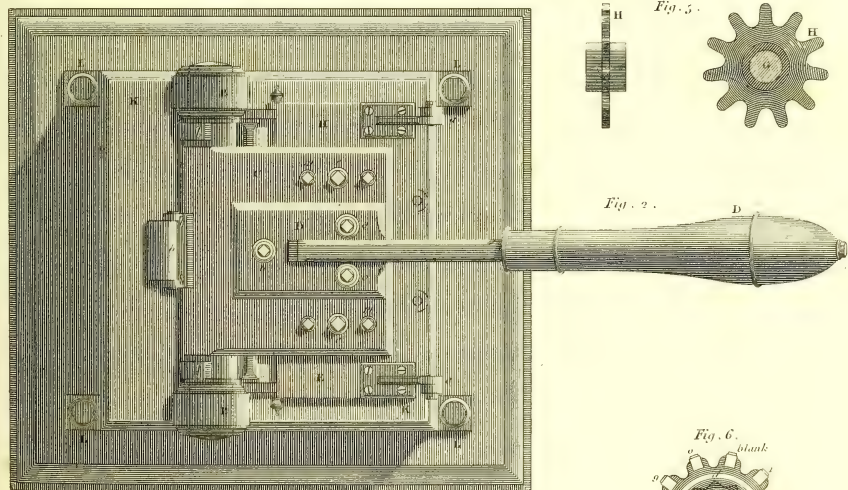


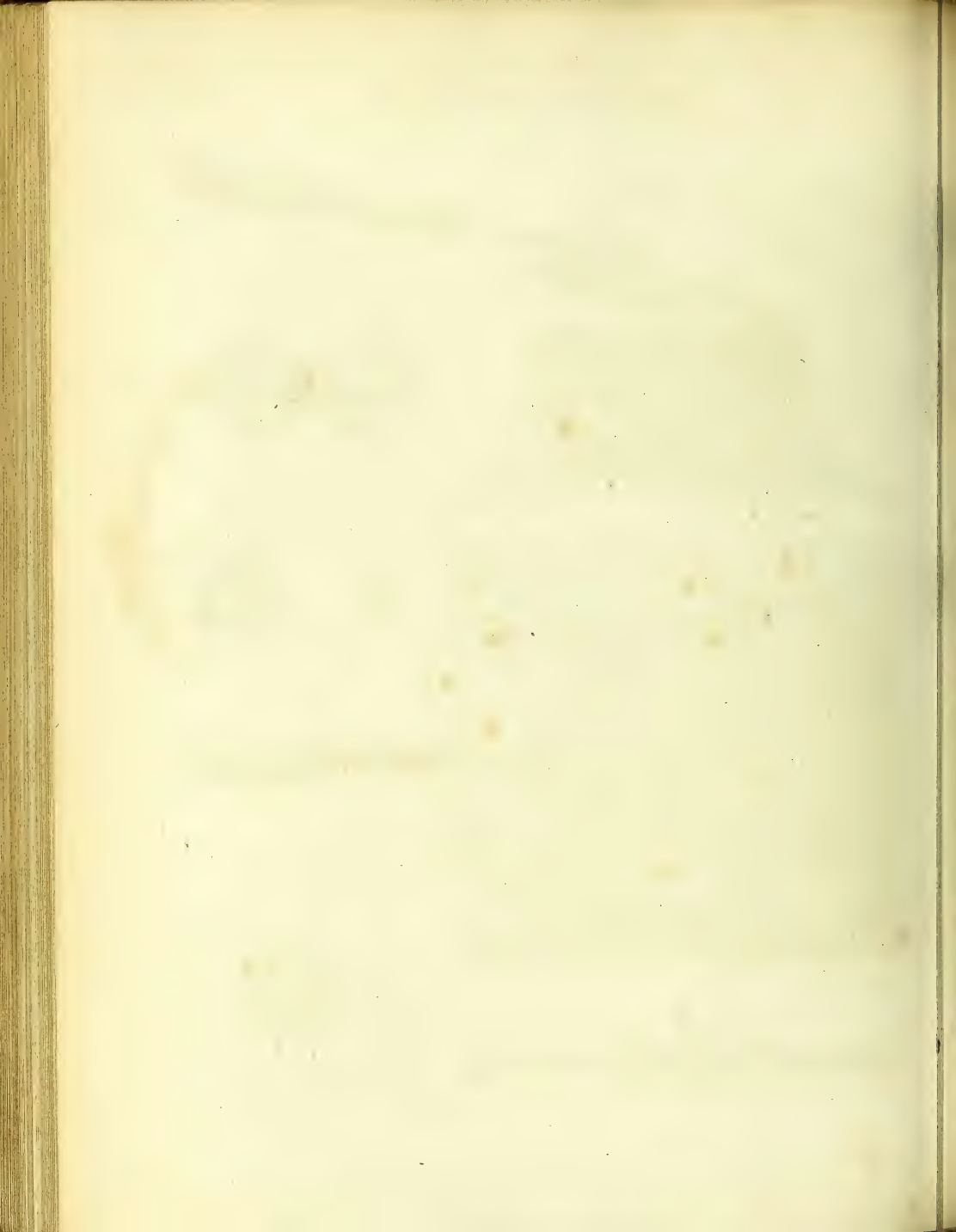
## PRINTING.

*M<sup>r</sup> Bramah's Bank note Printing machine.*



### Plan

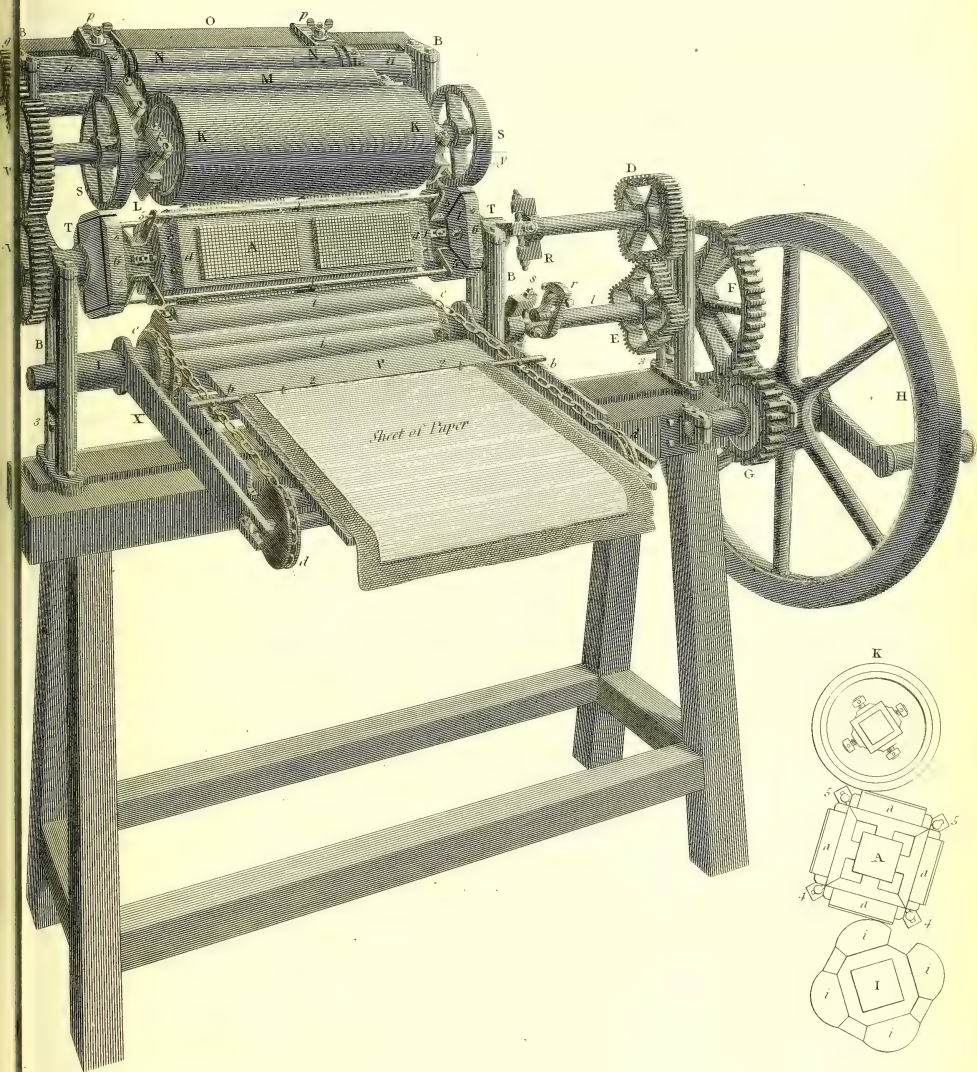




## PRINTING.

PLATE III.

*Mess<sup>rs</sup> Bacon & Donkins, PRINTING MACHINE.*









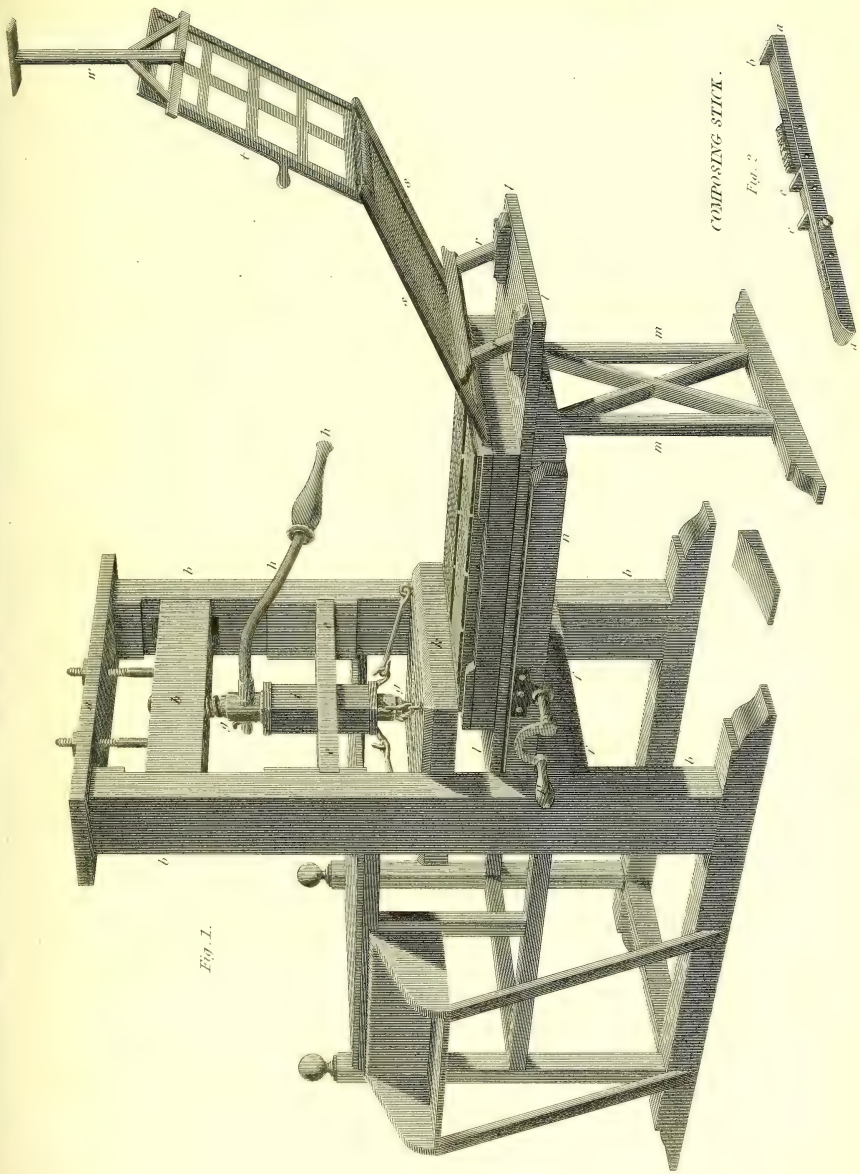


Fig. 1.

COMPOSING STICK.

Fig. 2.



Fig. 1.

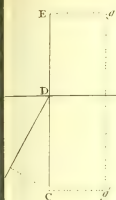


Fig. 2.



Fig. 3.



Fig. 4.



Fig. 5.

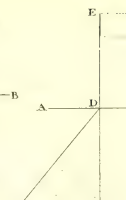


Fig. 7.

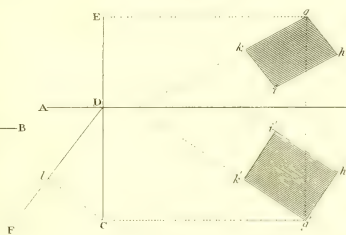


Fig. 8.

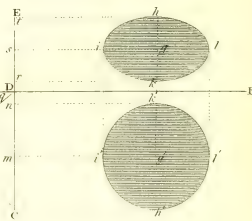


Fig. 6.

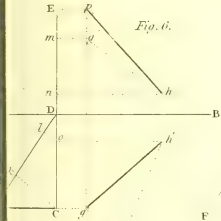


Fig. 9.

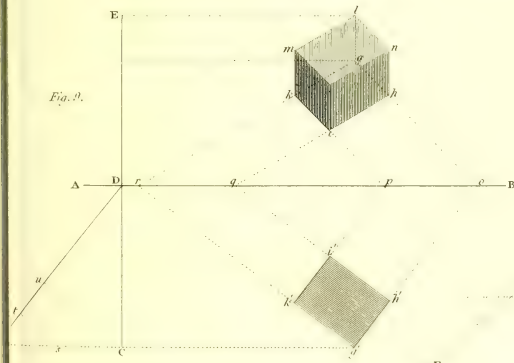


Fig. 10.

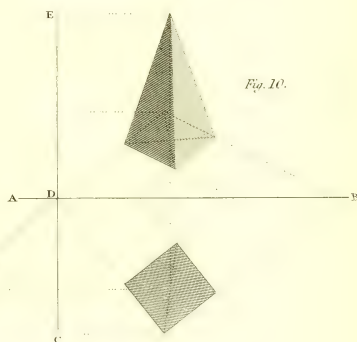


Fig. 11.

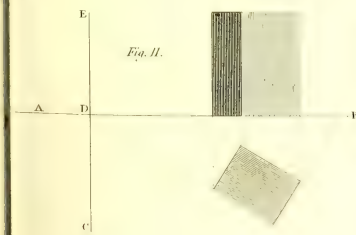


Fig. 12.

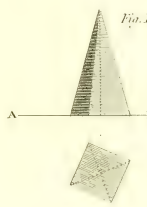
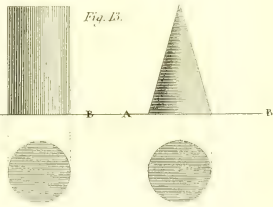


Fig. 13.



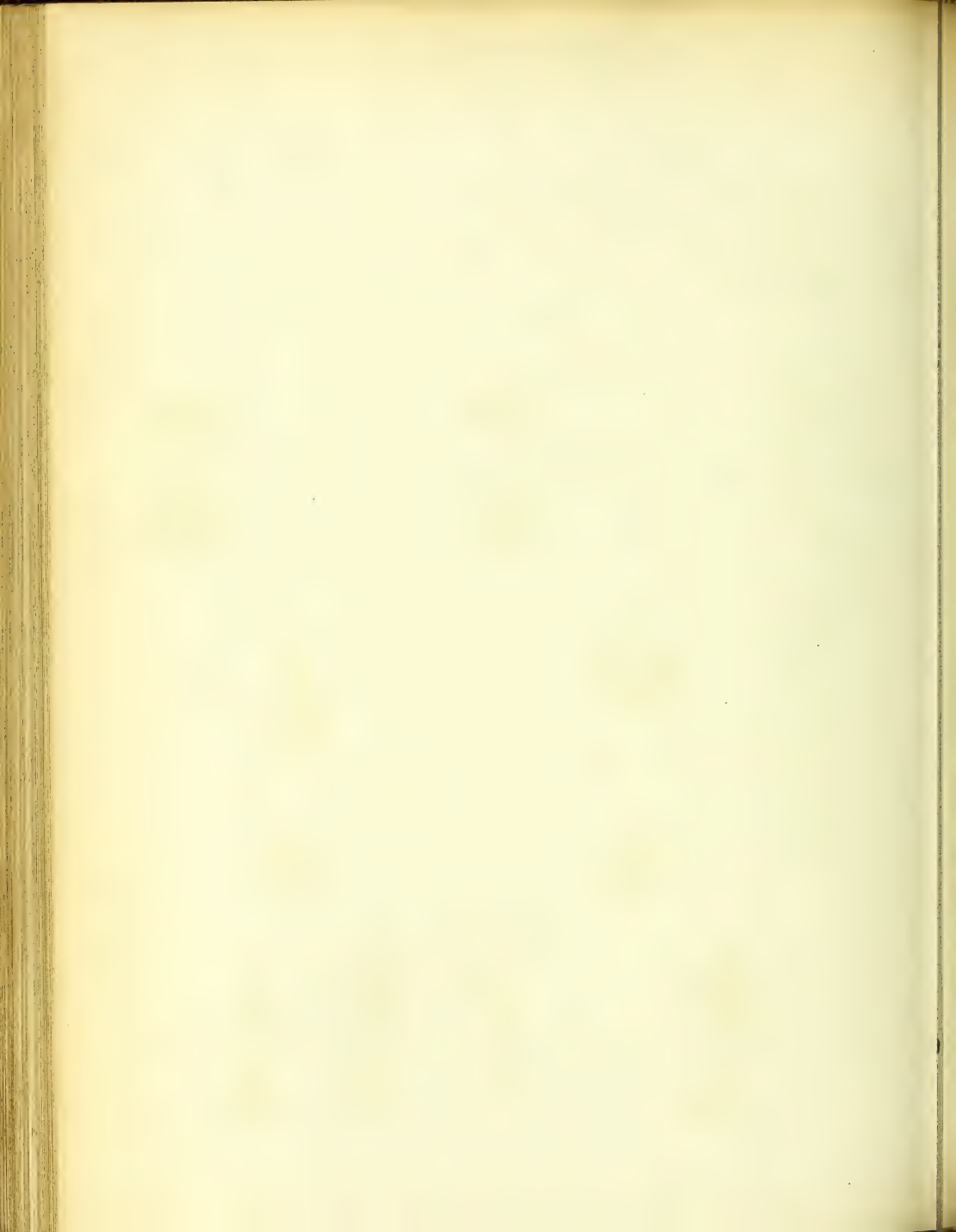


Fig. 1.

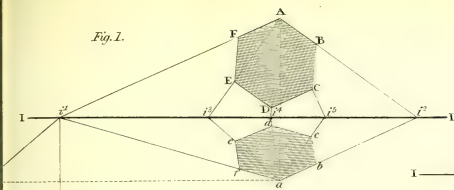


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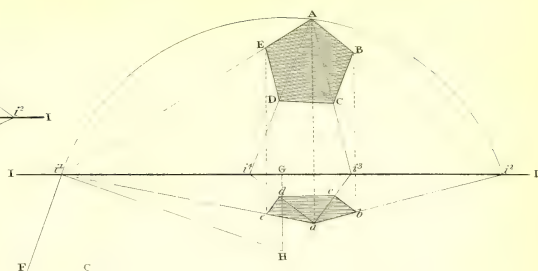


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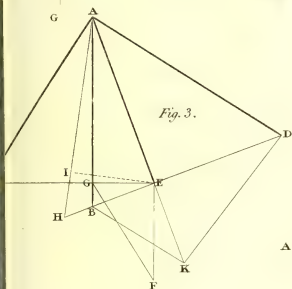


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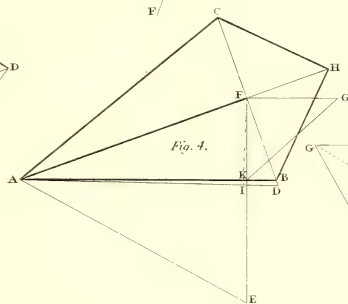


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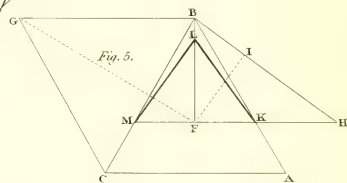


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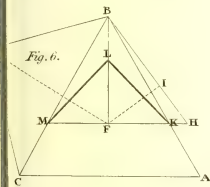


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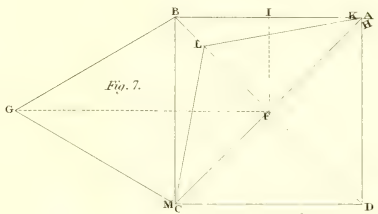


Fig. 8. N° 2.

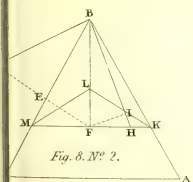


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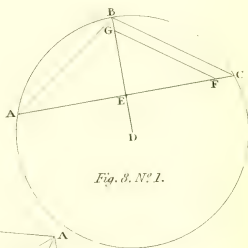
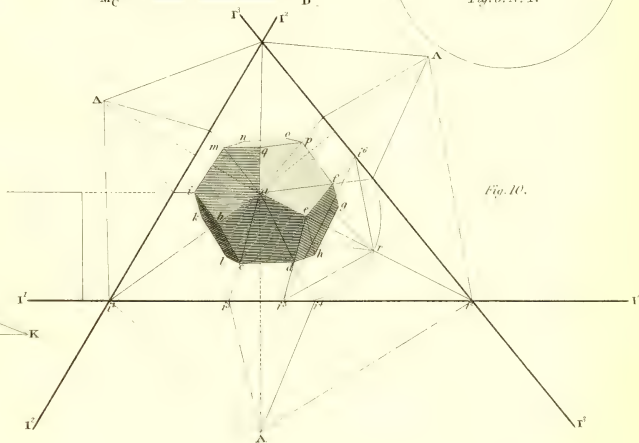


Fig. 10.





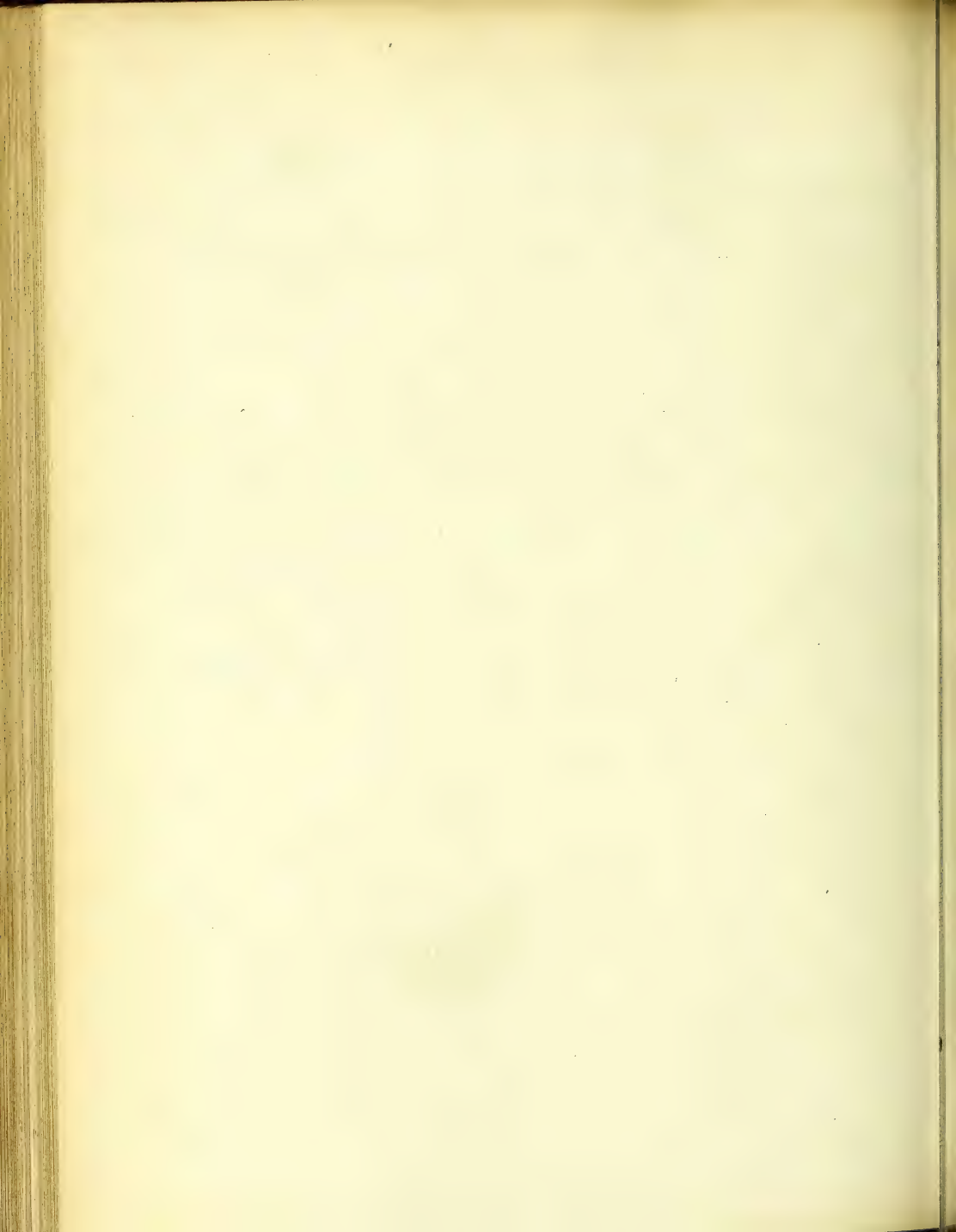


Fig. 1. N° 1.

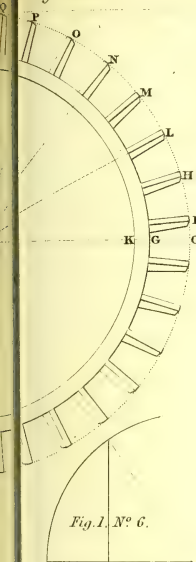


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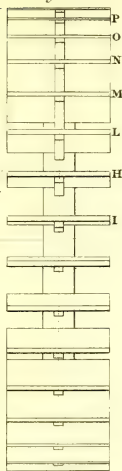


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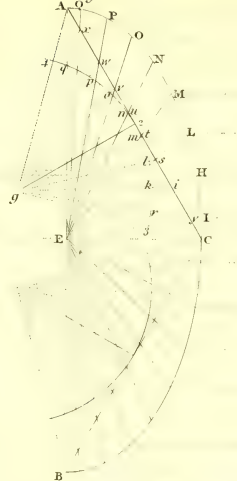


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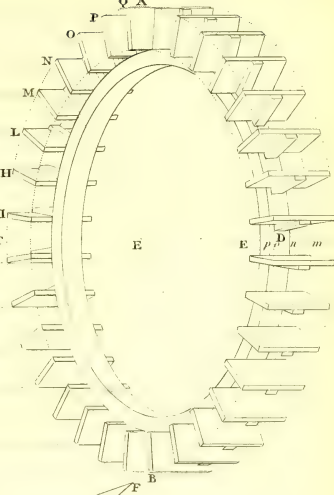


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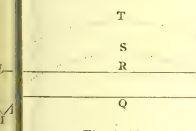


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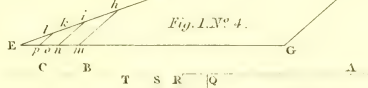


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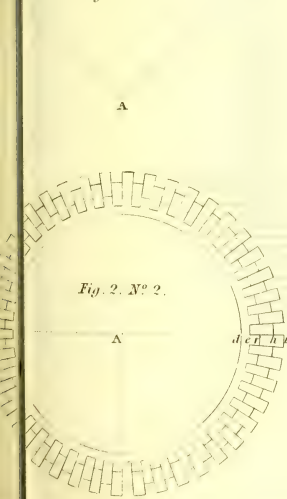


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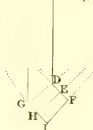


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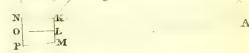


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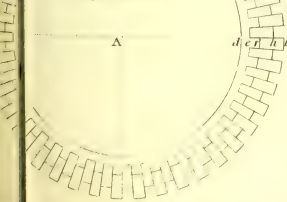
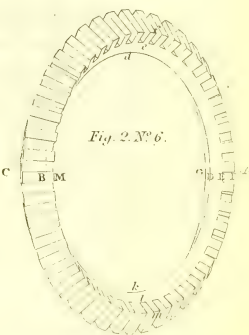


Fig. 2. N° 4.



Fig. 2. N° 6.



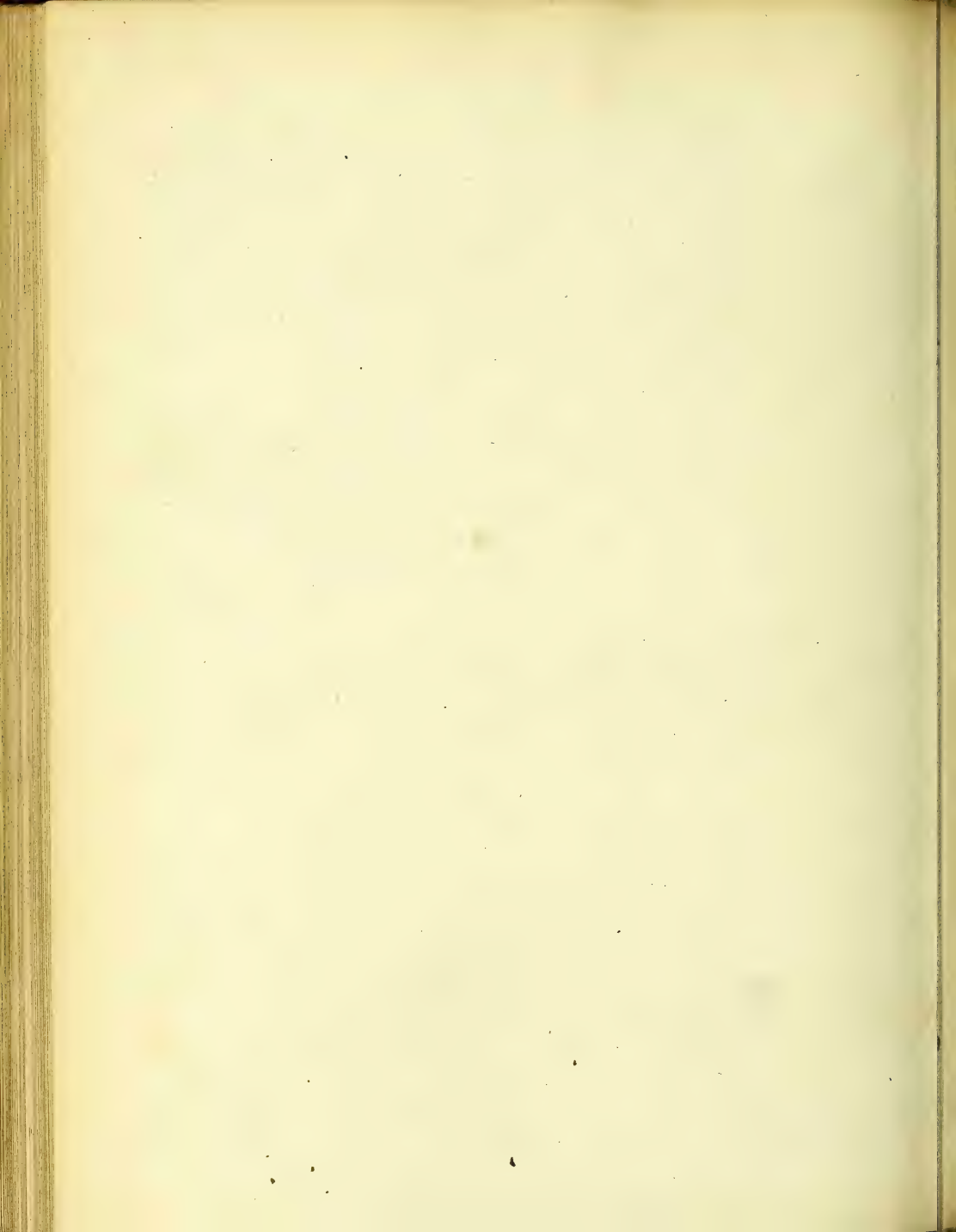


Fig. 1.

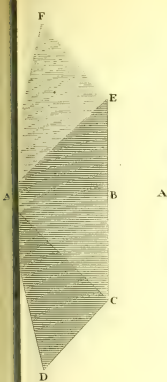


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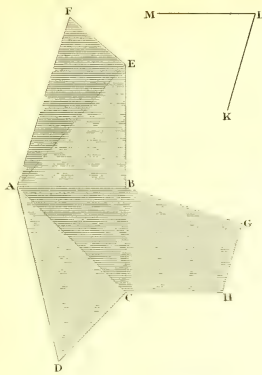


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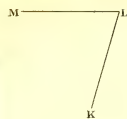


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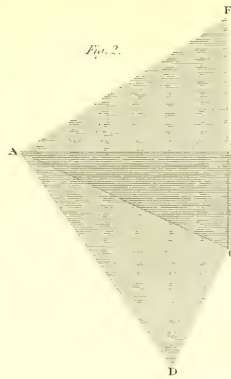


Fig. 3.

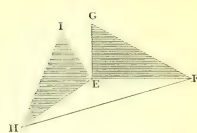


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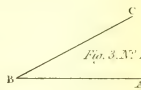


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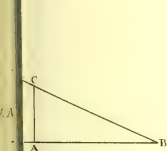


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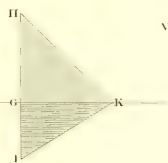


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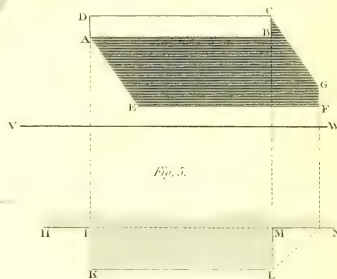


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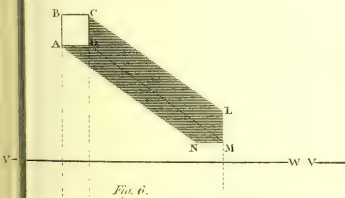


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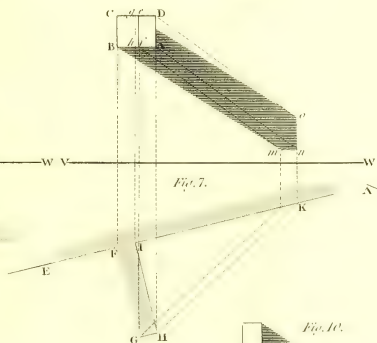


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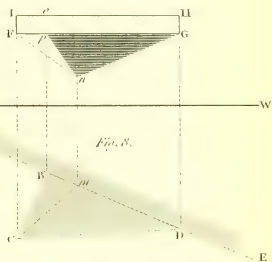


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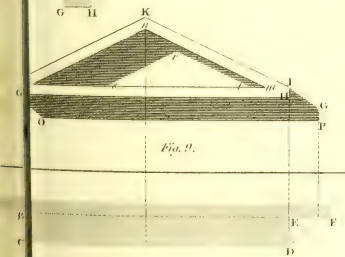


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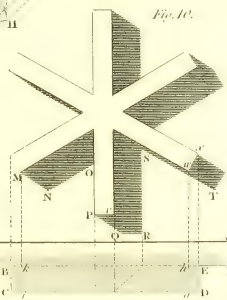
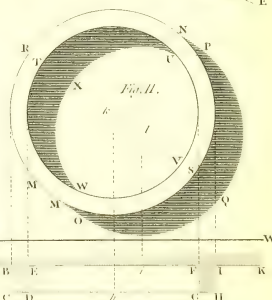
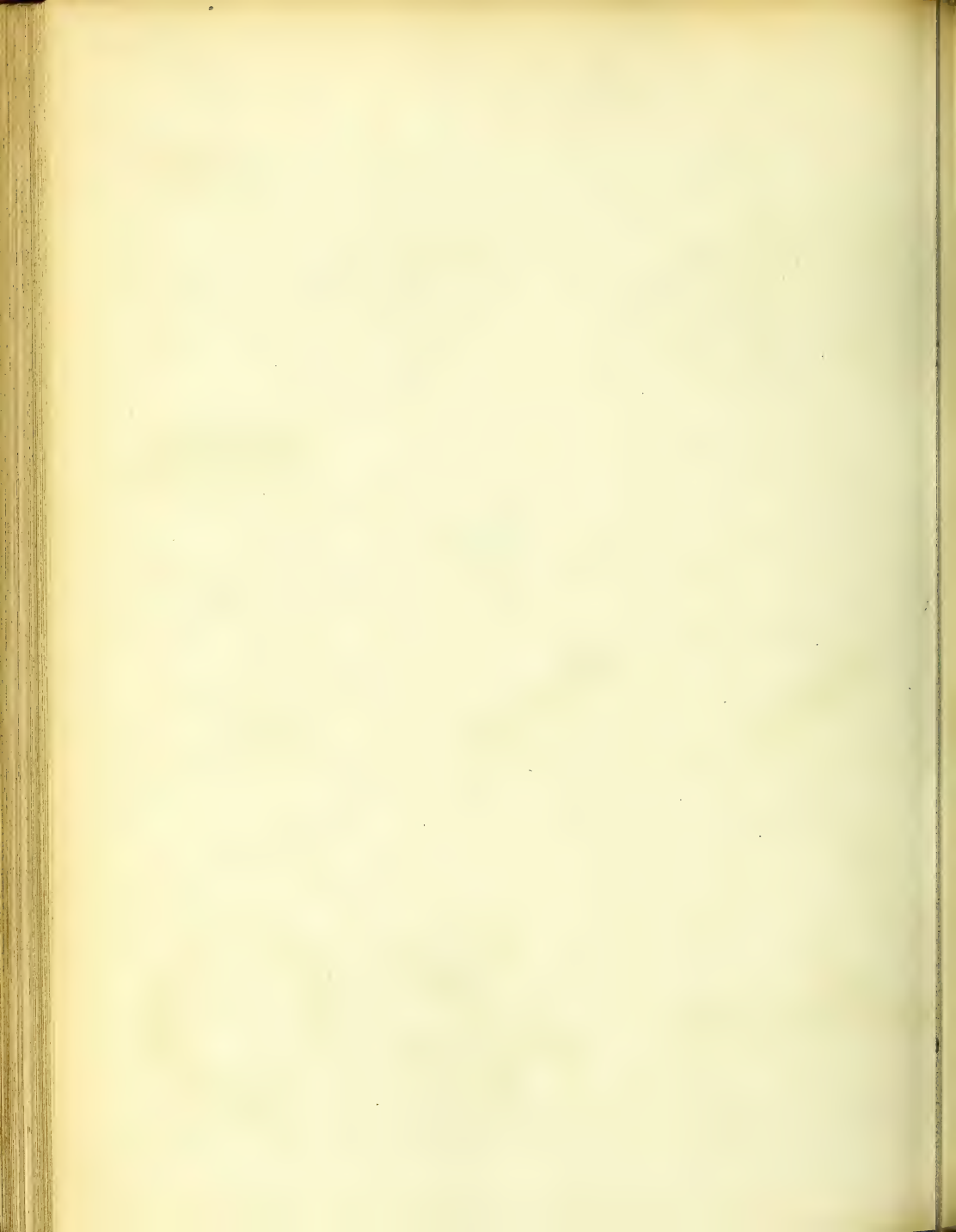
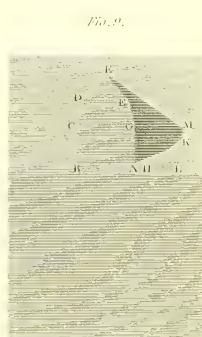
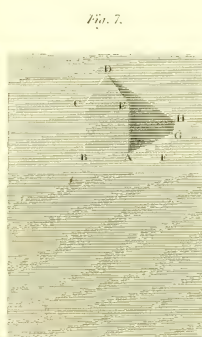
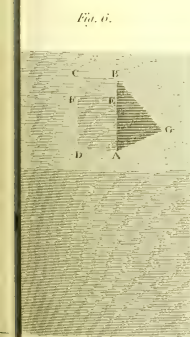
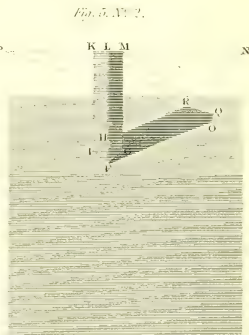
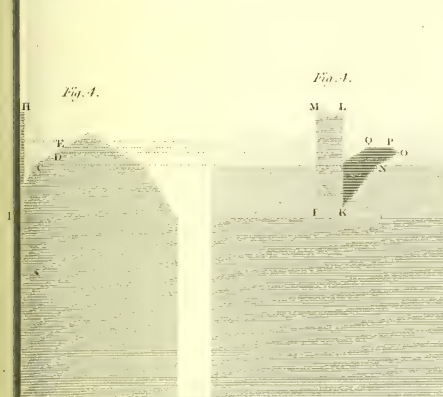
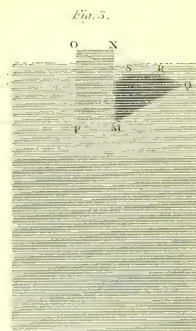
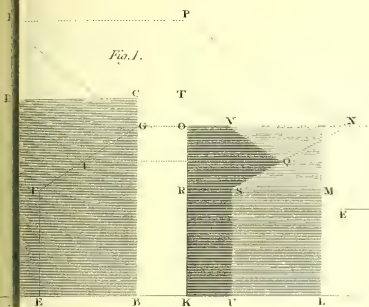


Fig. 11.









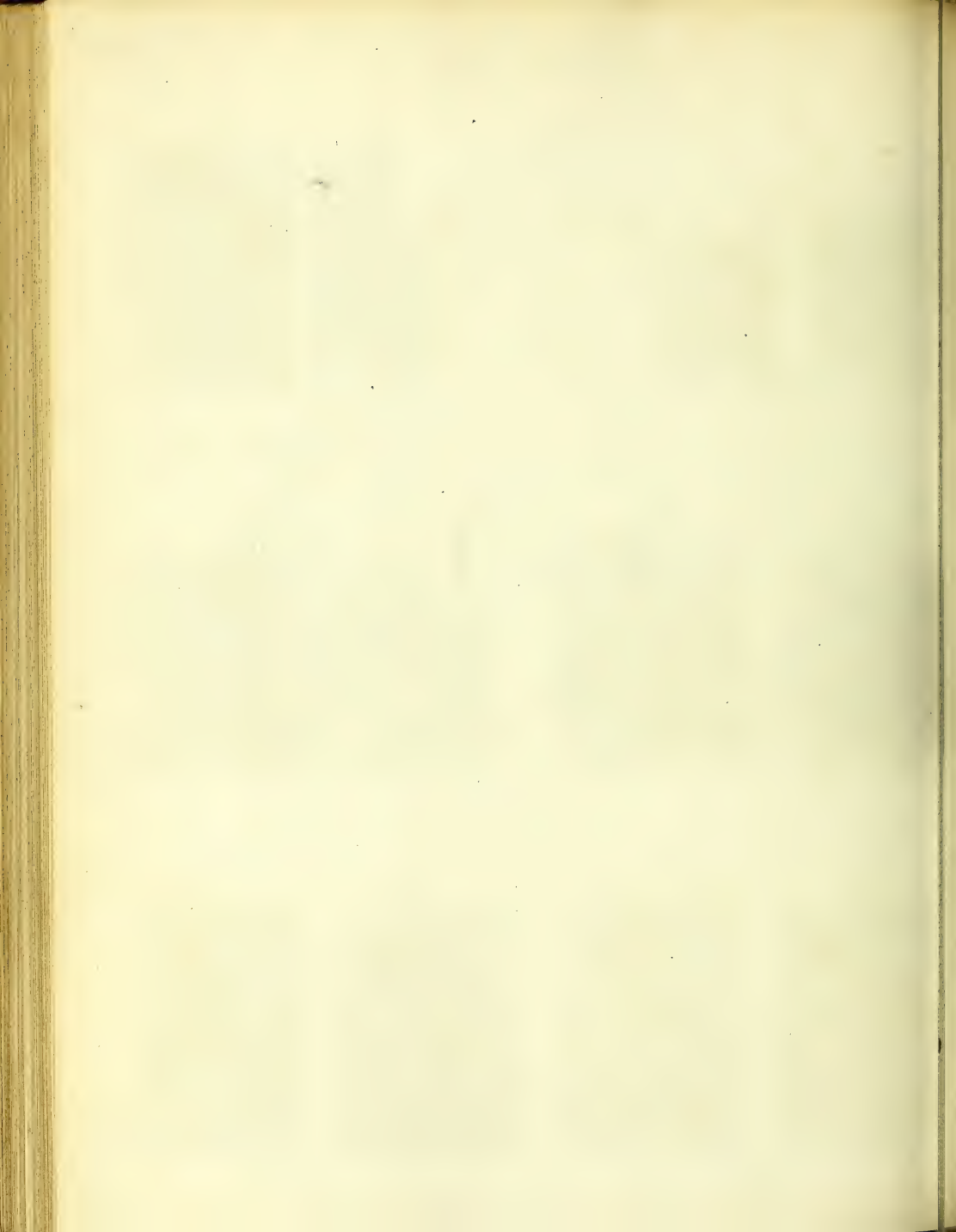


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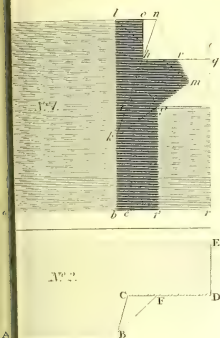


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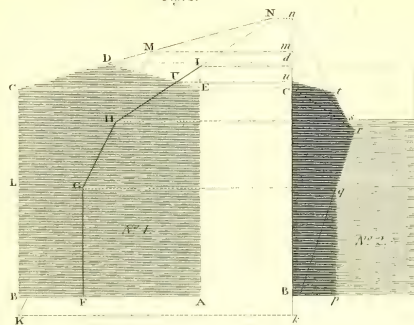


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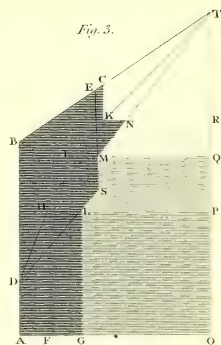


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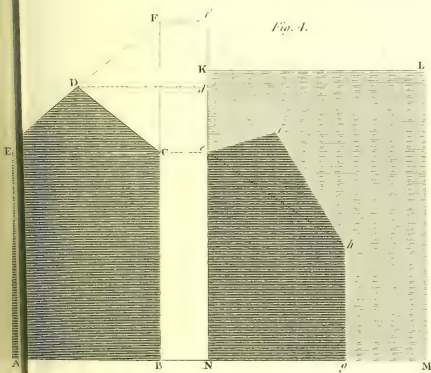


Fig. 5.

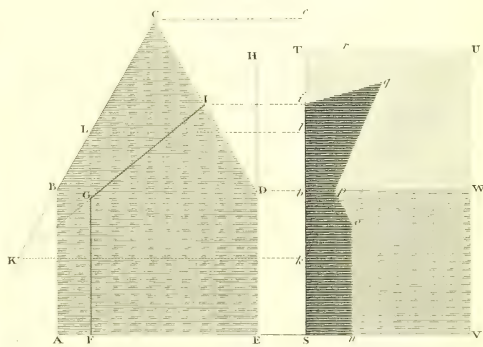


Fig. 6. N° 1.

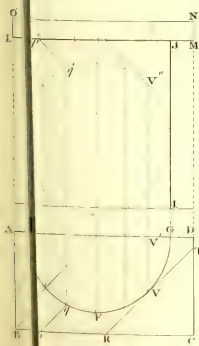


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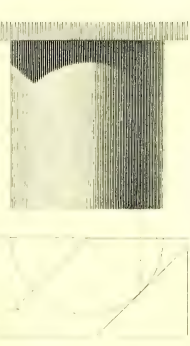


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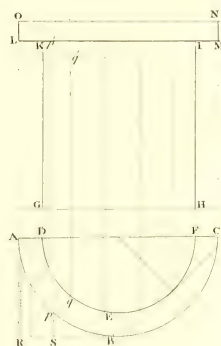
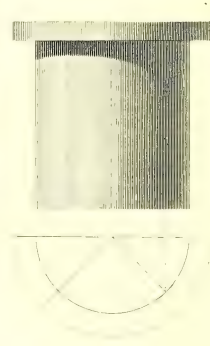


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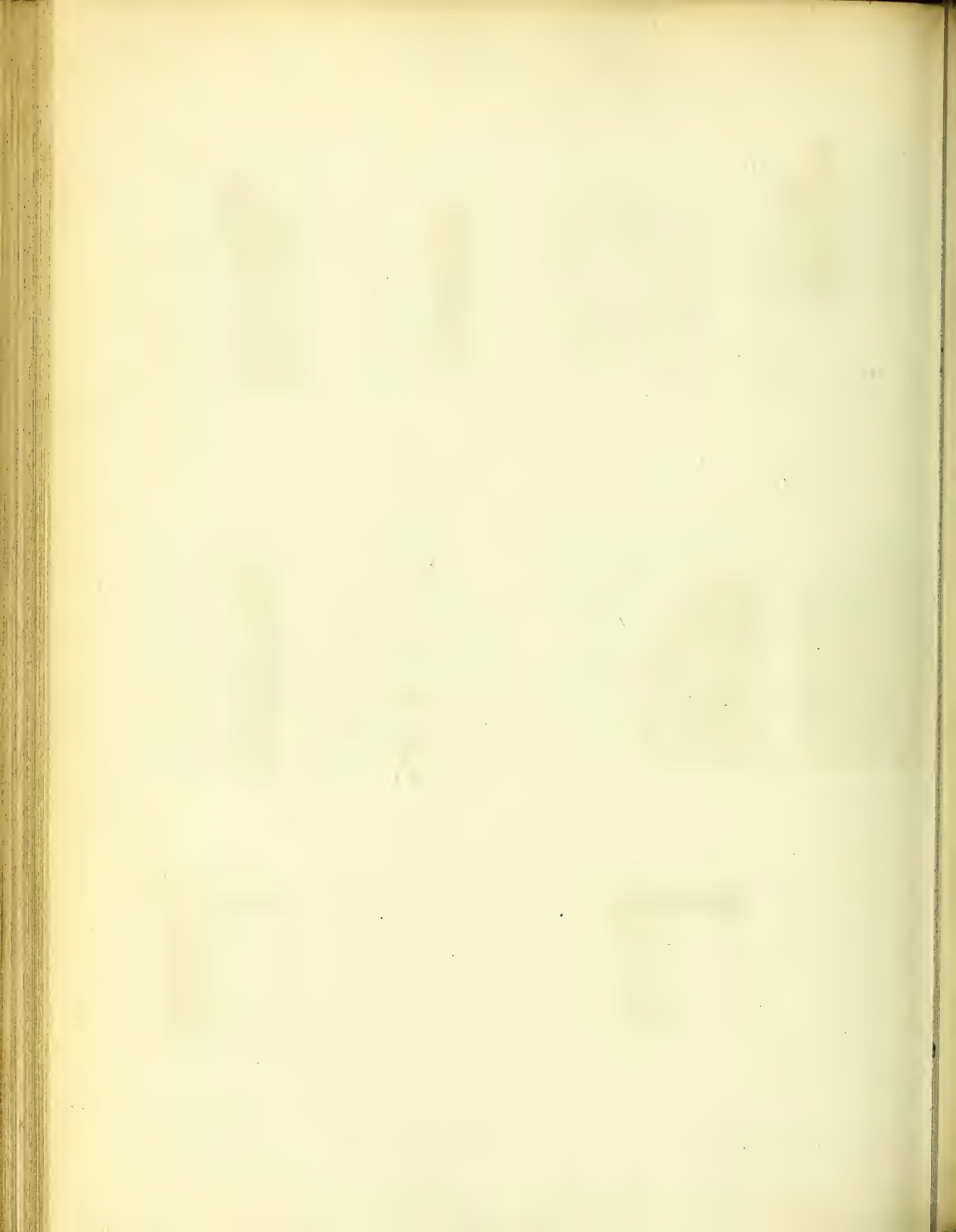


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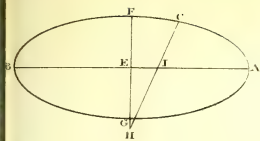


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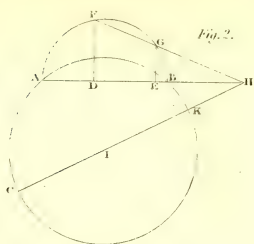


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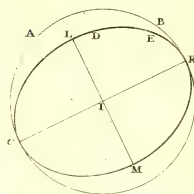


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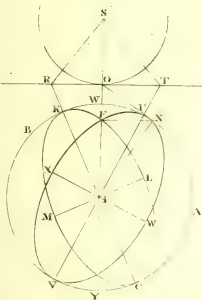


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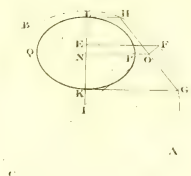


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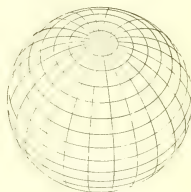


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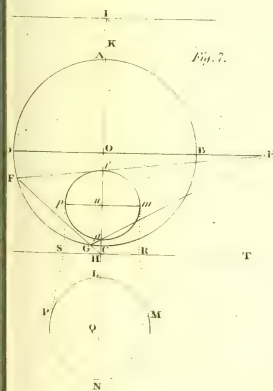


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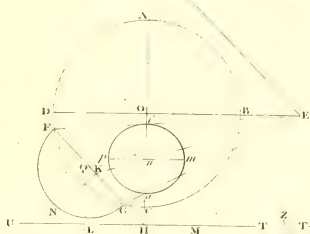


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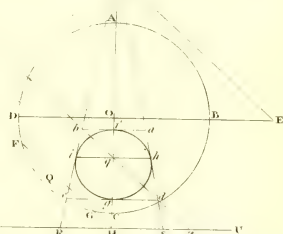


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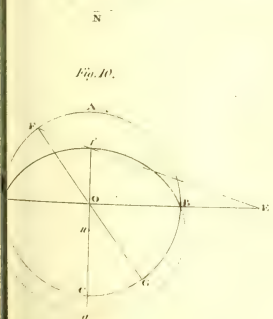


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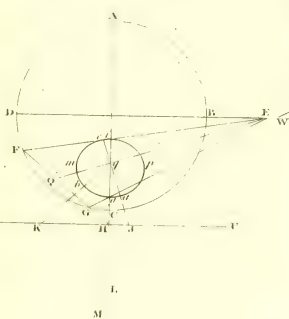
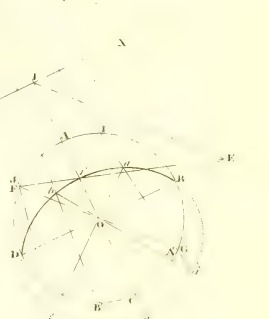


Fig. 12.





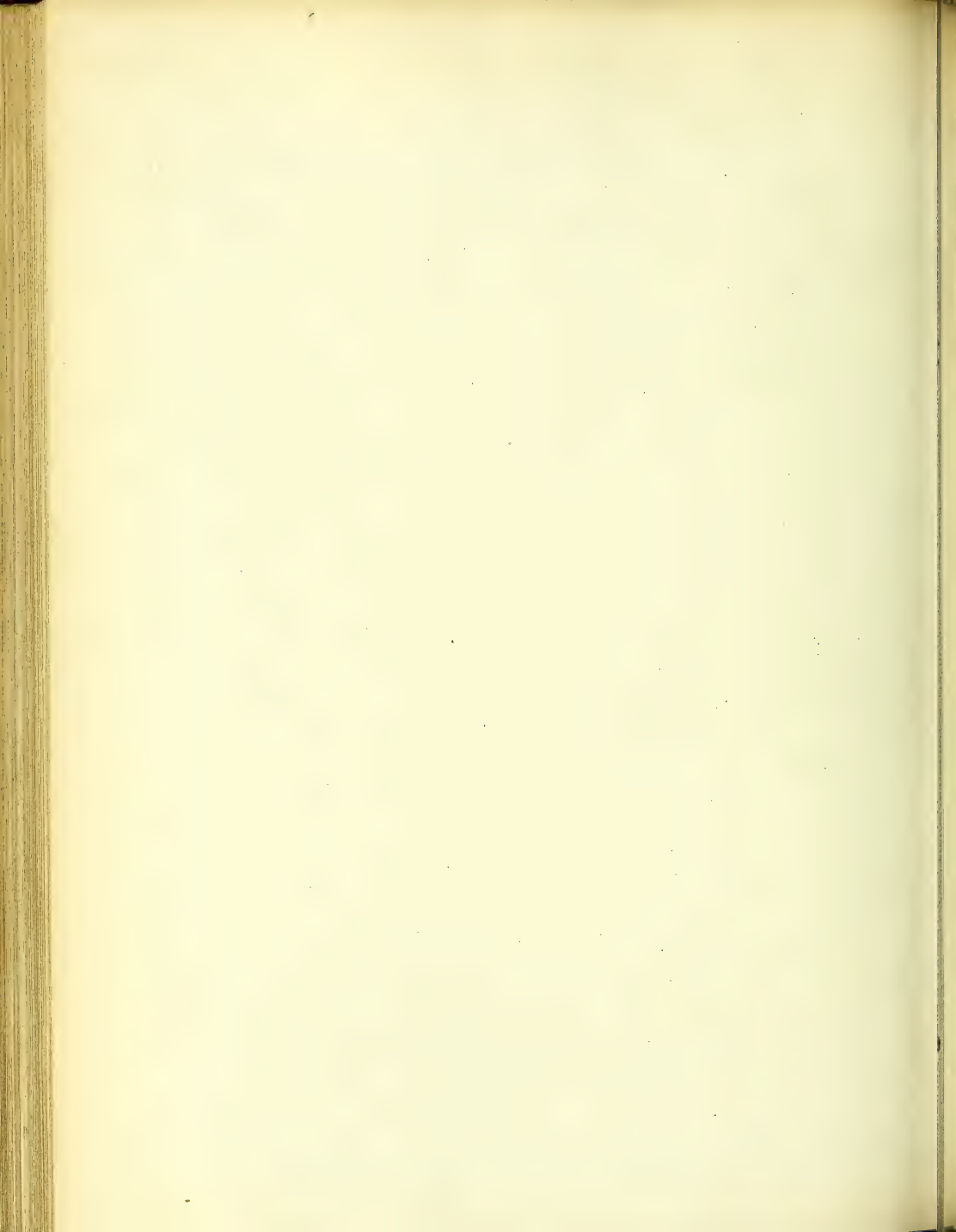


Fig. 1.

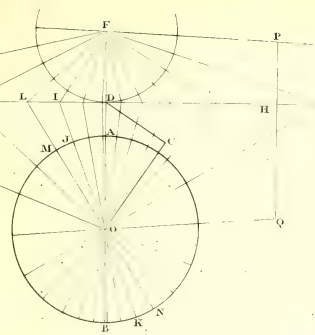


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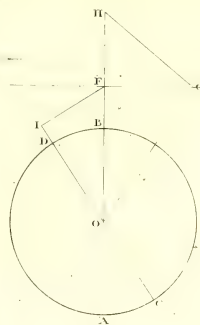


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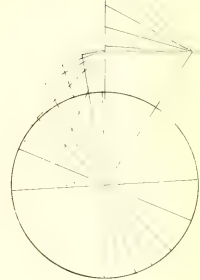


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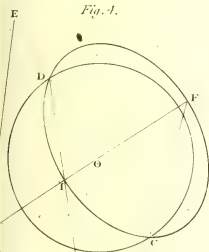


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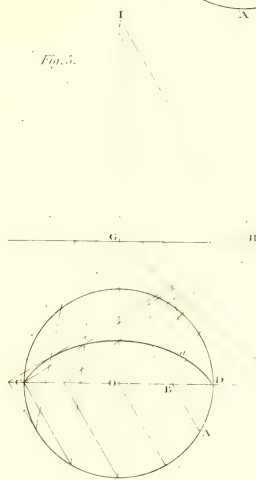


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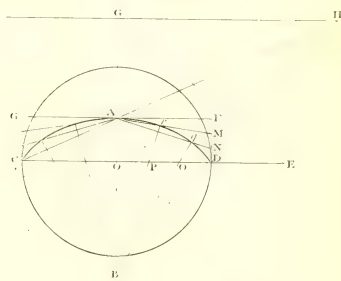


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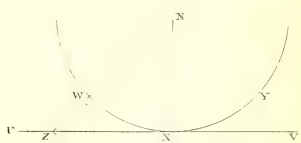


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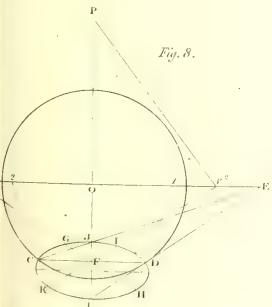
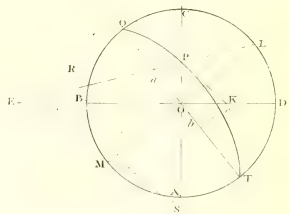
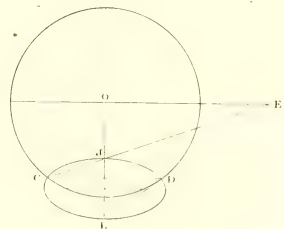


Fig. 9.



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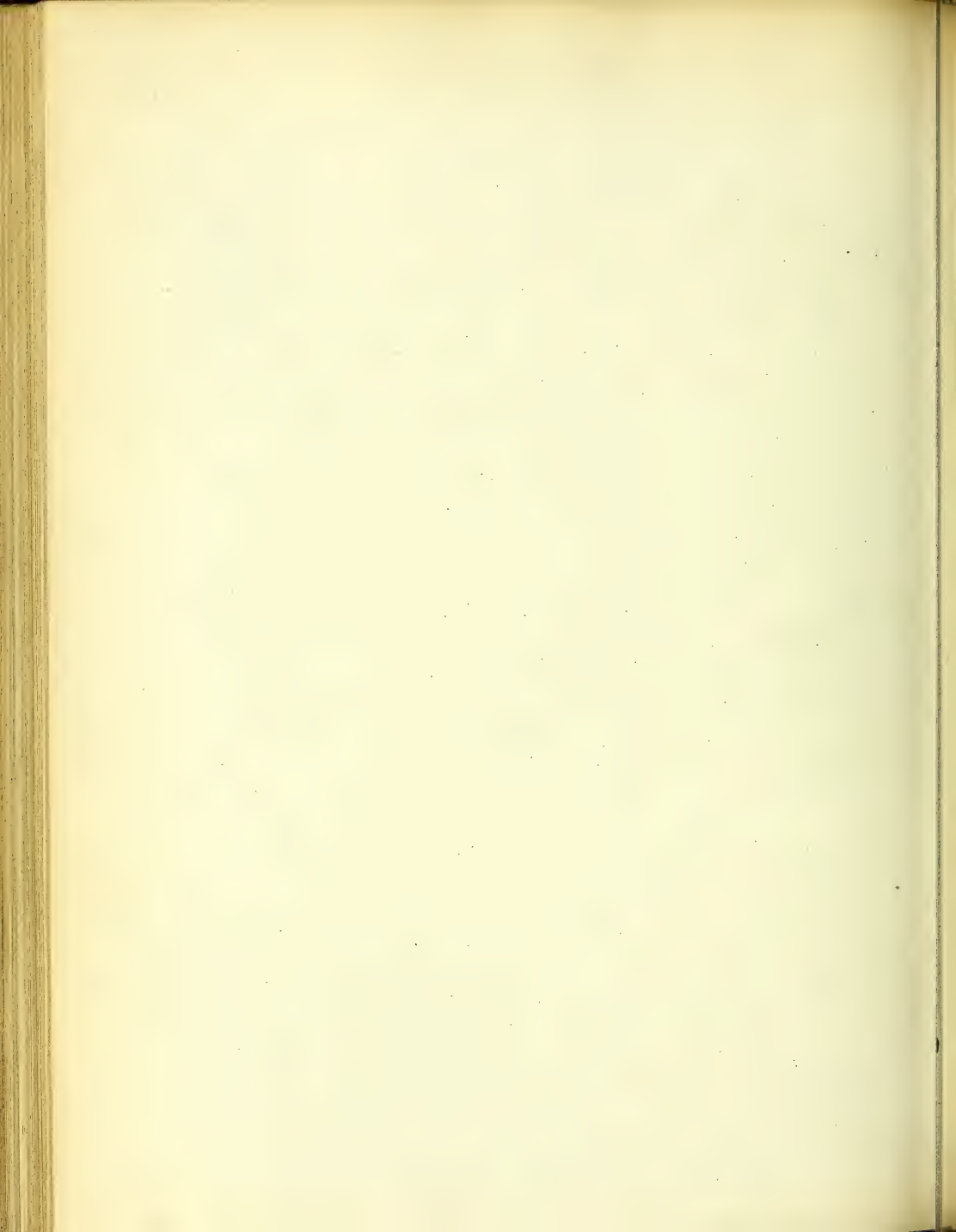


Fig. 1.

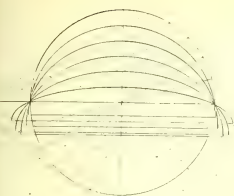


Fig. 2.

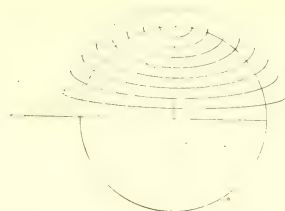


Fig. 3.

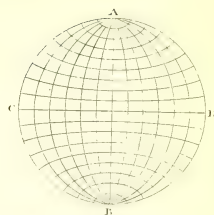


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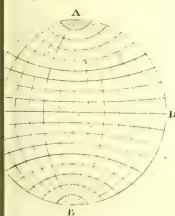


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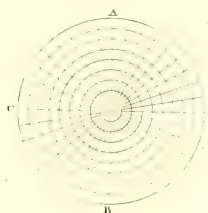


Fig. 6.



Fig. 10.

Fig. 7.

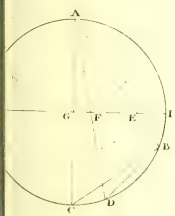


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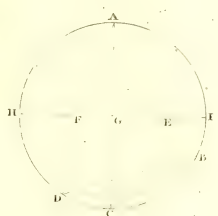


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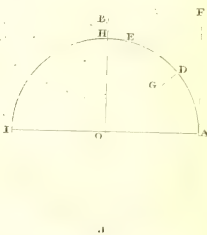
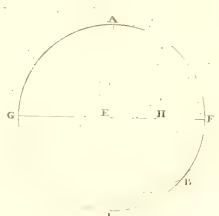


Fig. 11.

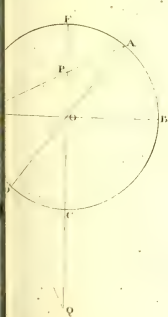


Fig. 12.

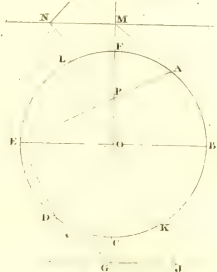


Fig. 13.

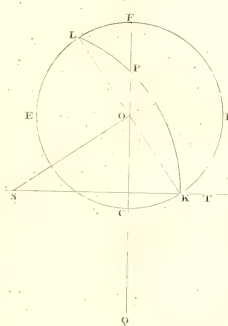
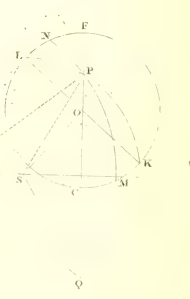


Fig. 14.



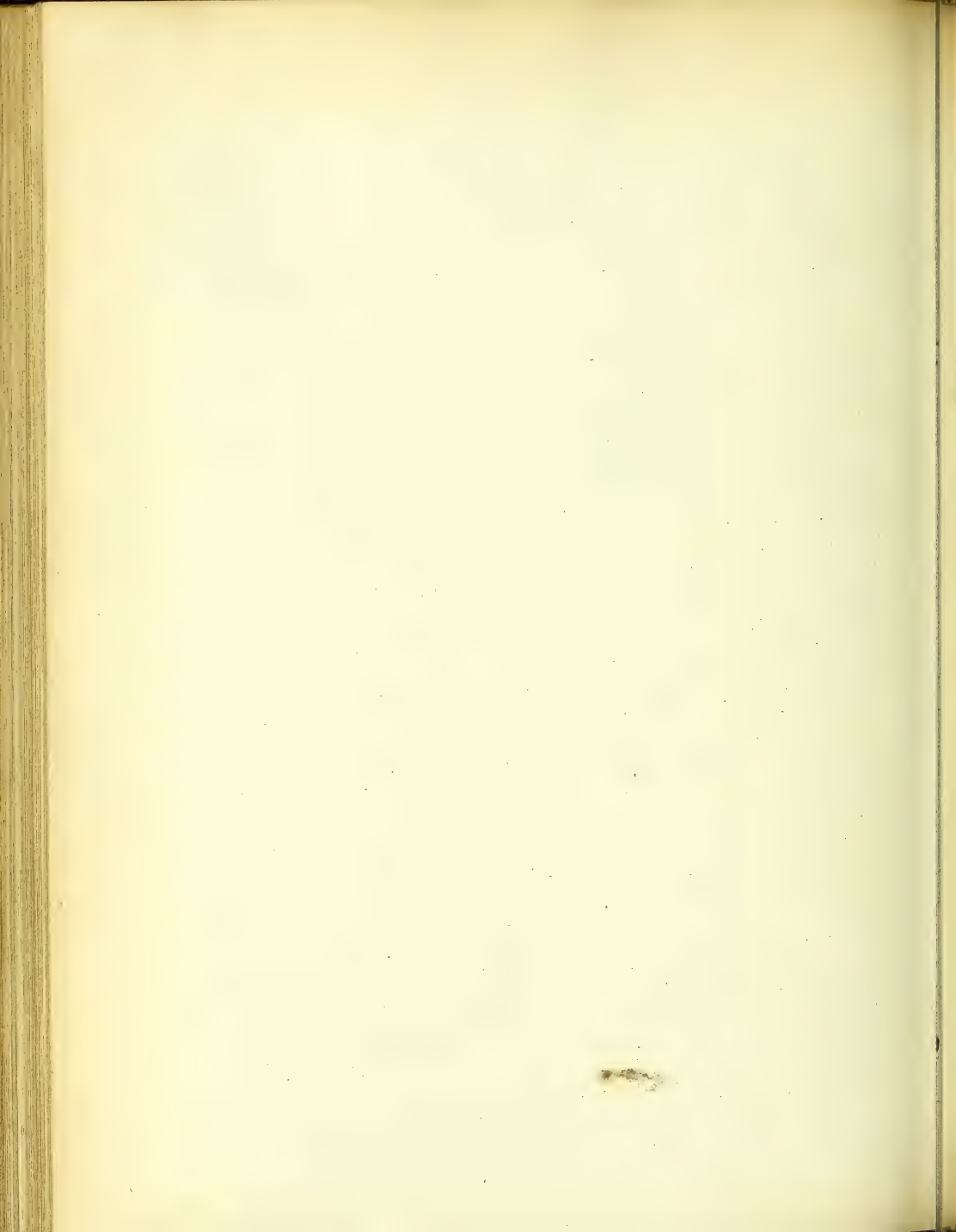




Fig. 1.

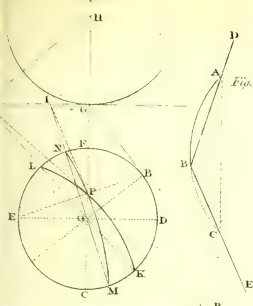


Fig. 1. No. 2.

Fig. 2.

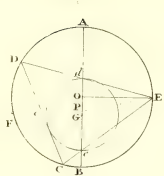


Fig. 3. No. 1.

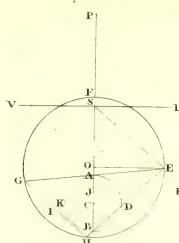


Fig. 3. No. 2.

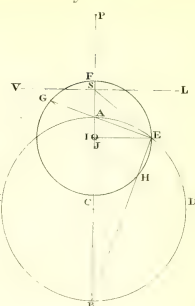


Fig. 5.

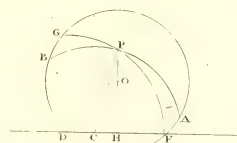


Fig. 7.

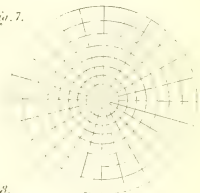


Fig. 6.

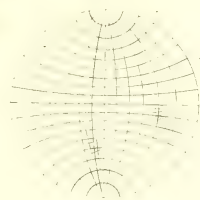


Fig. 8.

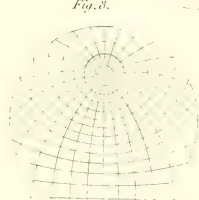


Fig. 9.

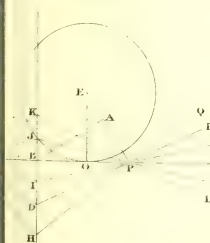


Fig. 10.

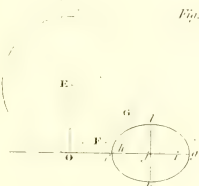


Fig. 11.

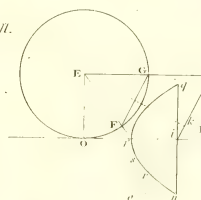


Fig. 12.

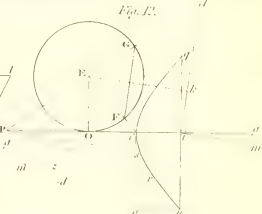


Fig. 1. No. 1.

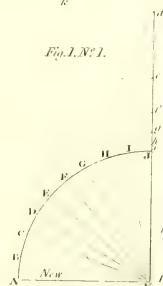


Fig. 1. No. 2.

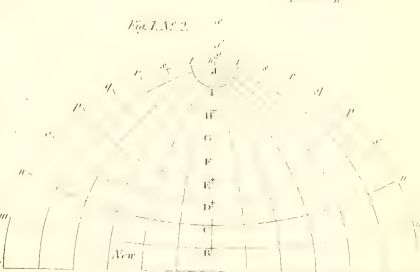
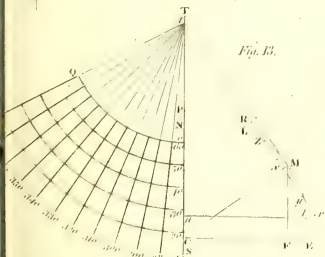
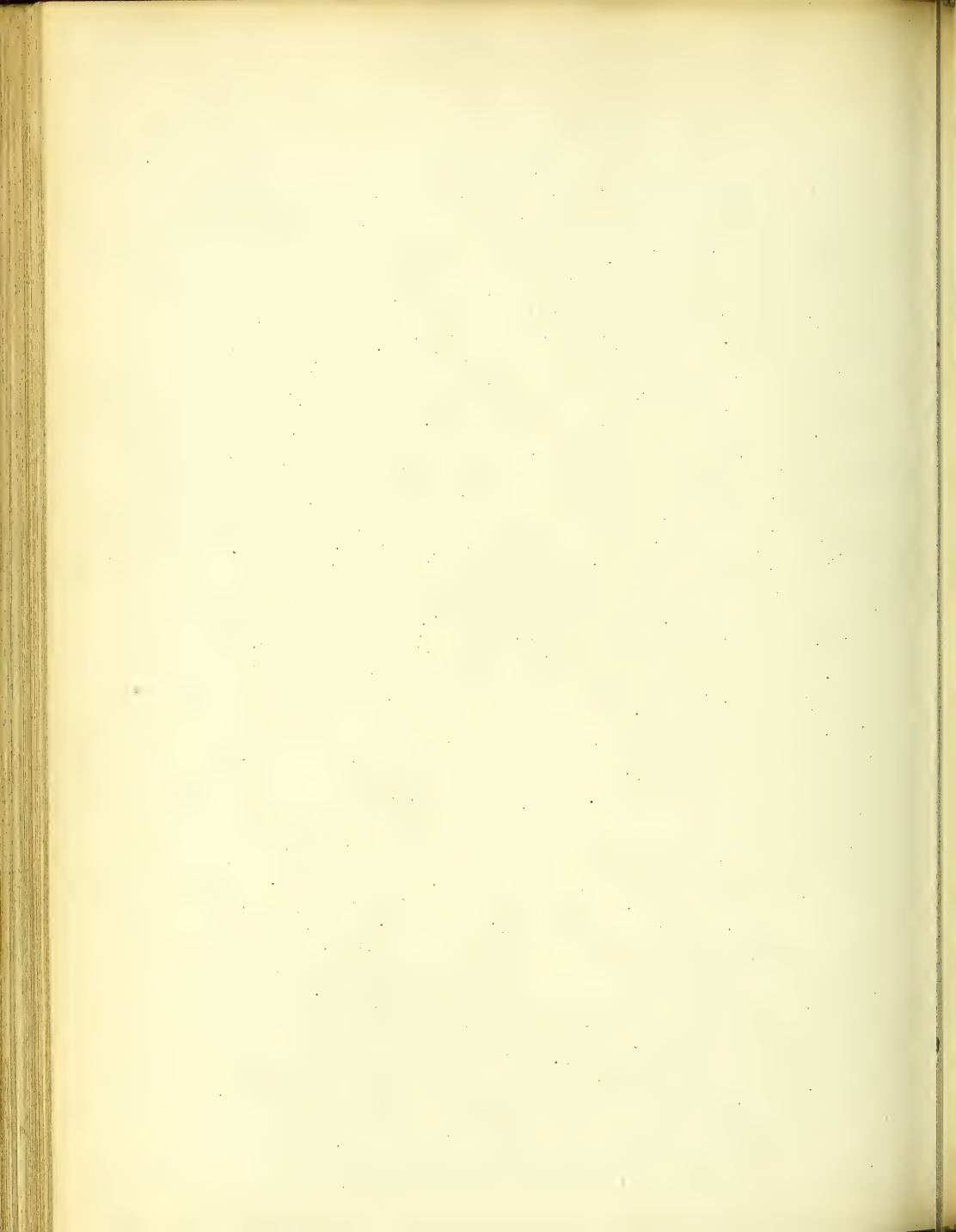


Fig. 13.





# PROPORTIONAL COMPASSES.

Fig. 1.

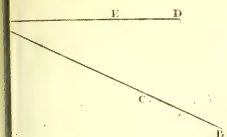


Fig. 2.

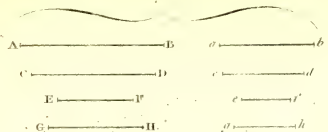


Fig. 3.

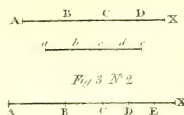


Fig. 4.

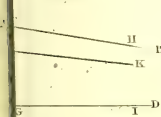


Fig. 5.

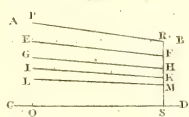


Fig. 6.

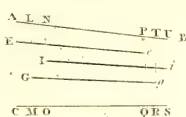


Fig. 7.

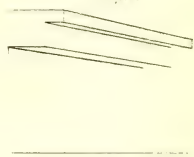


Fig. 8.

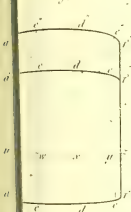


Fig. 9.

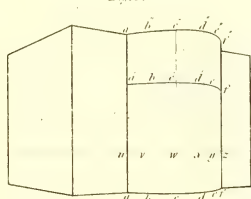


Fig. 12.

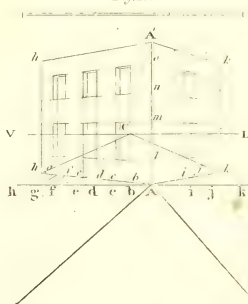


Fig. 13.

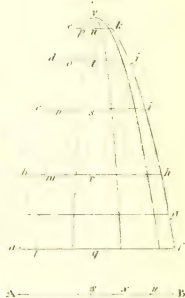


Fig. 11.

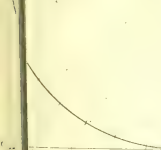


Fig. 13.

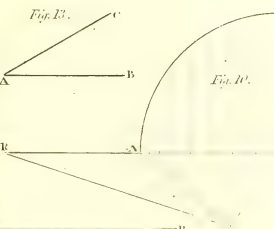


Fig. 10.

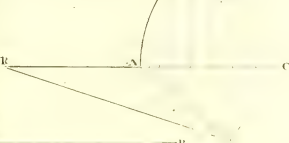


Fig. 11.



Fig. 16.

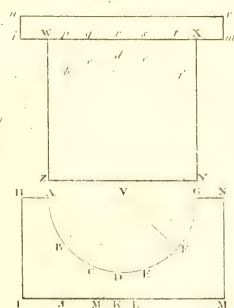


Fig. 15, N° 1.

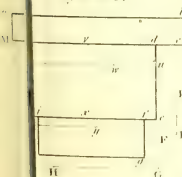


Fig. 15, N° 2.

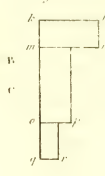


Fig. 17, N° 1.

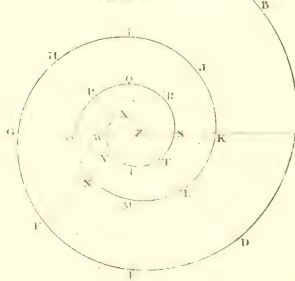
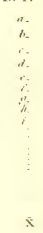
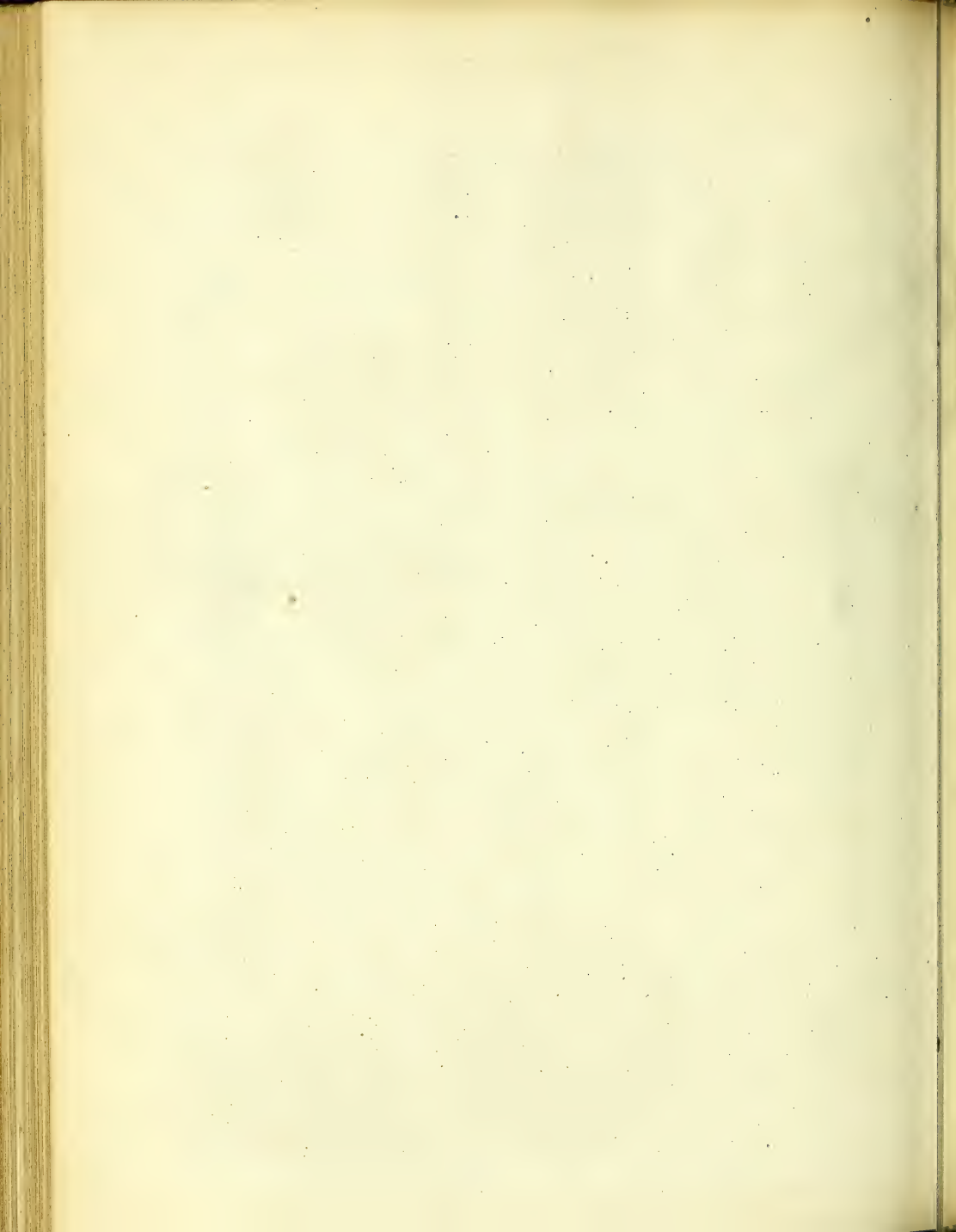
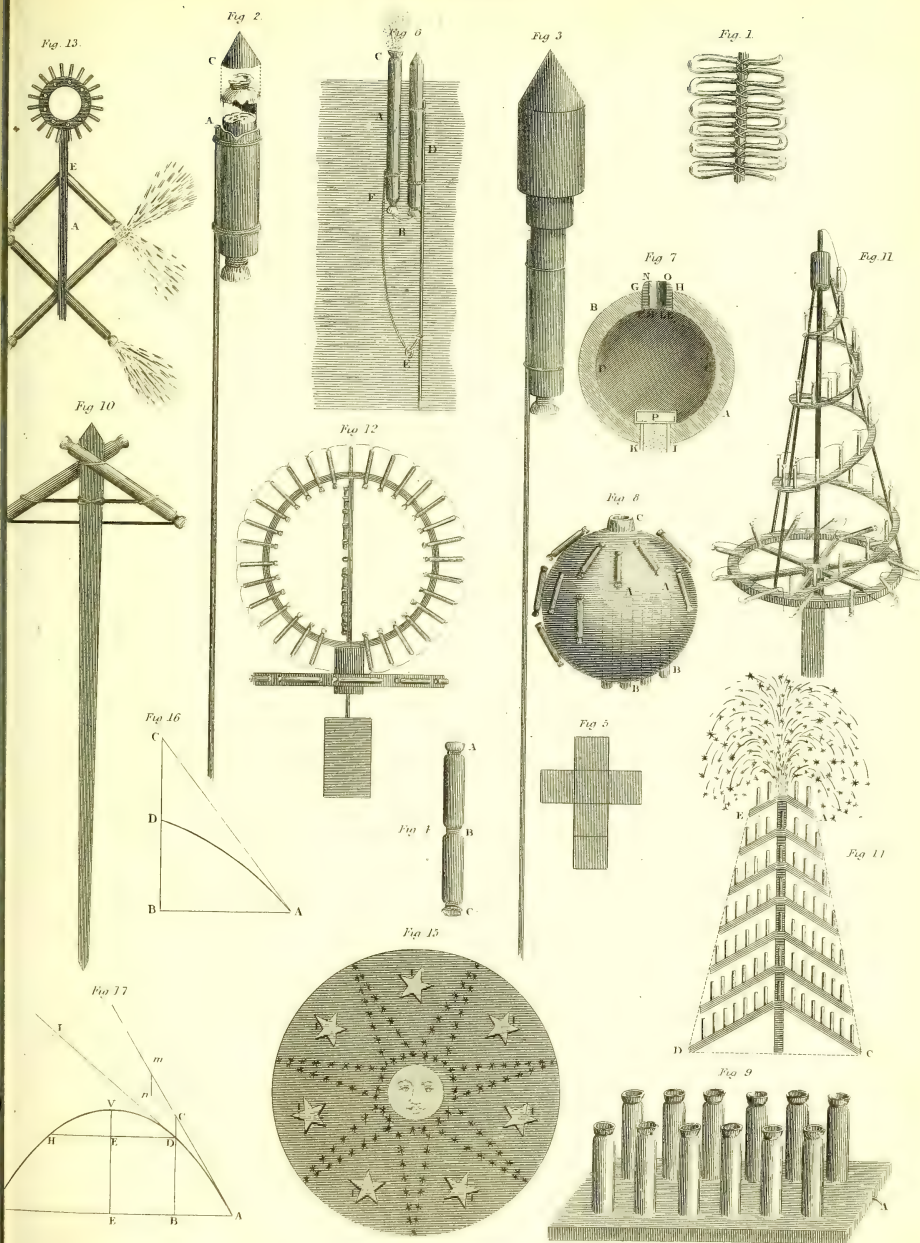


Fig. 17, N° 1.





# PYROTECHNY





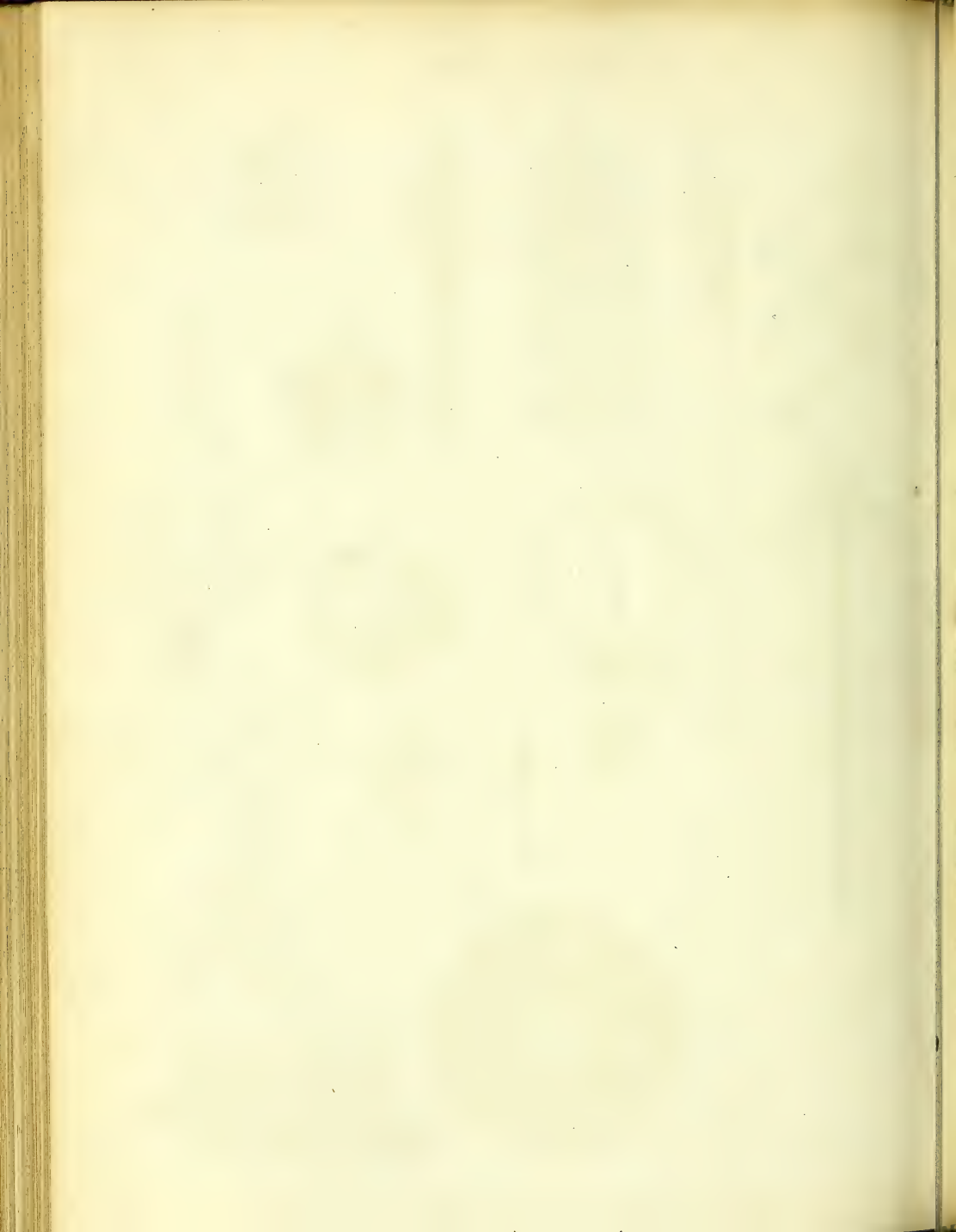


Fig. 1.

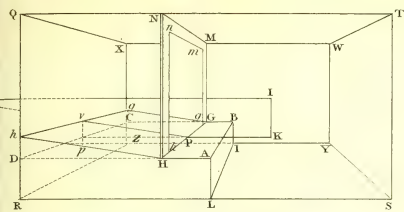


Fig. 2.

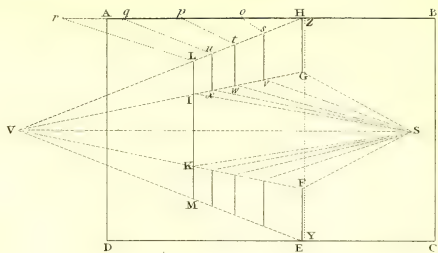


Fig. 5.

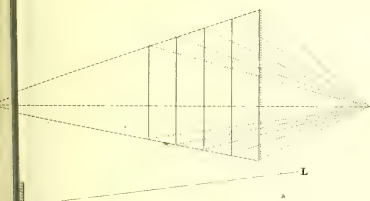


Fig. 8.



Fig. 6.

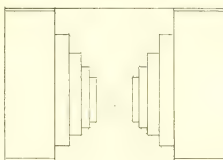


Fig. 4.

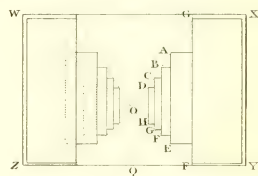


Fig. 9.

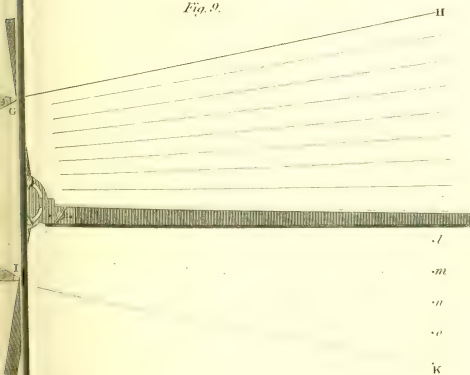


Fig. 10.

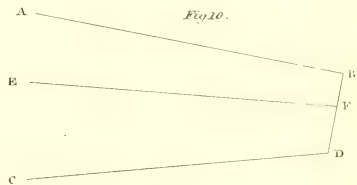
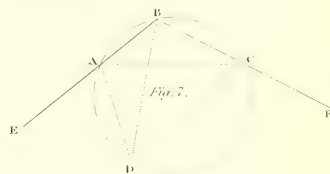
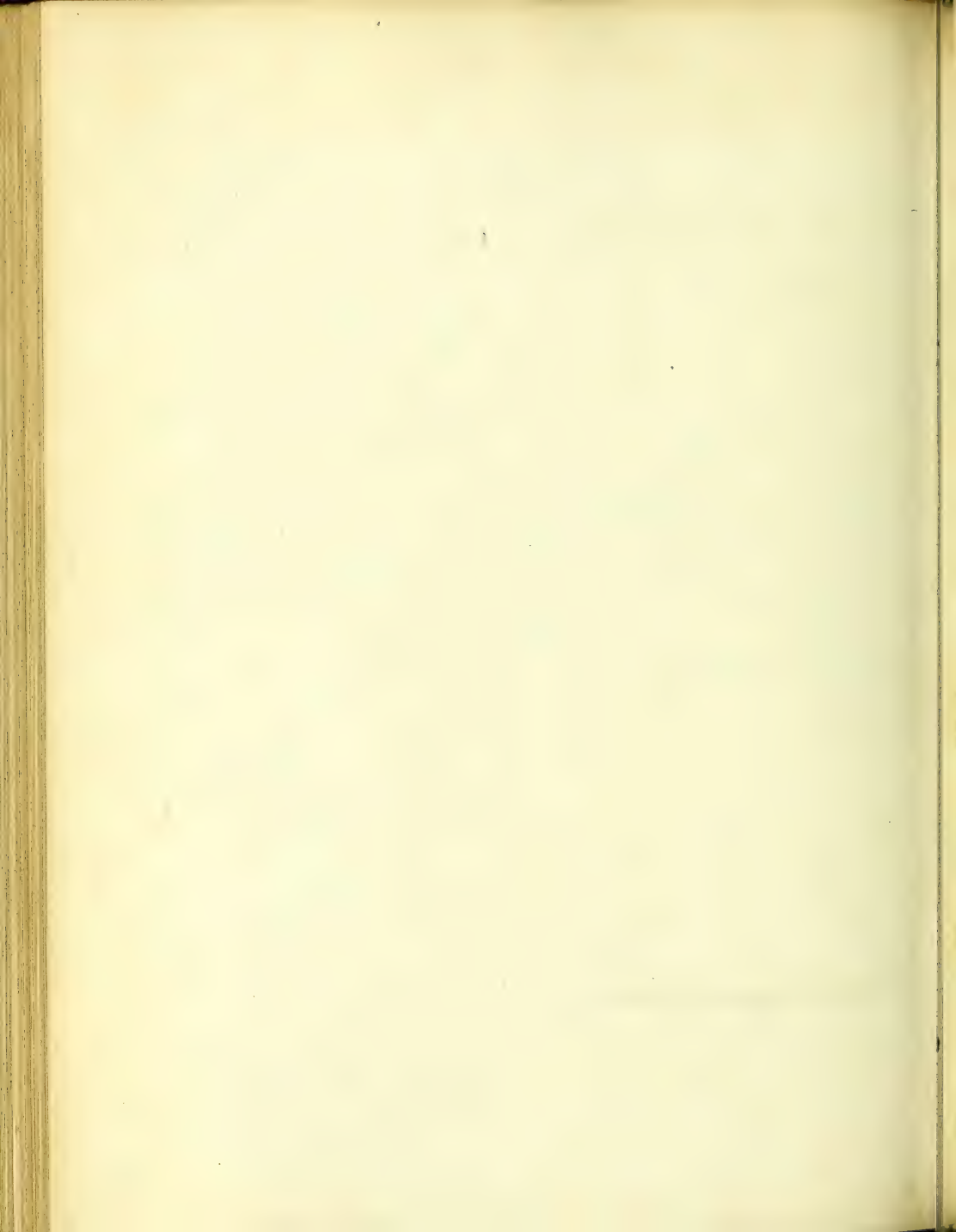


Fig. 7.



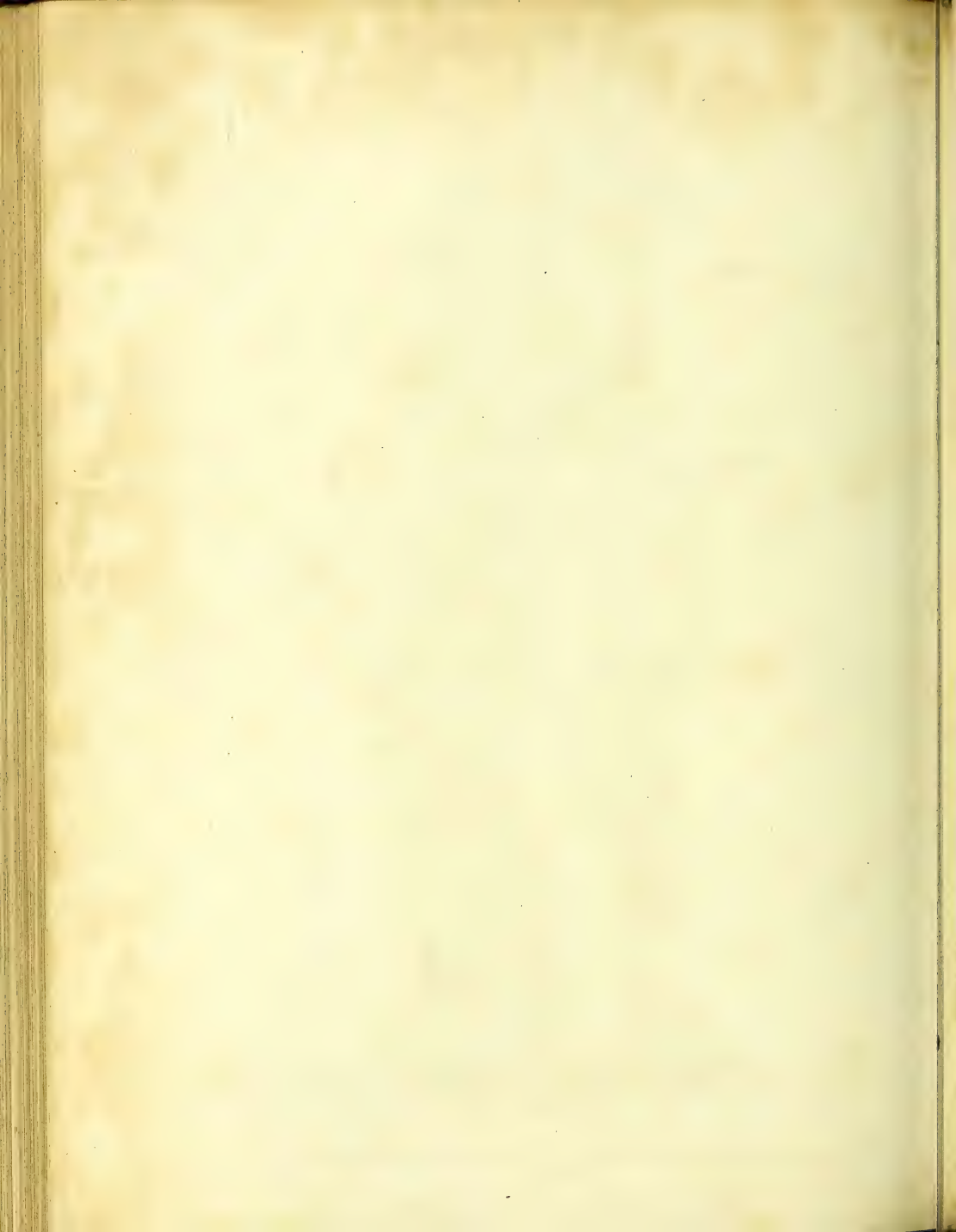




Donné par H. Howard

Engraved by J. G. Smith

FROM AN ANTIQUE MARBLE GROUP OF CUPID & PSYCHE, IN THE CAPITOL.

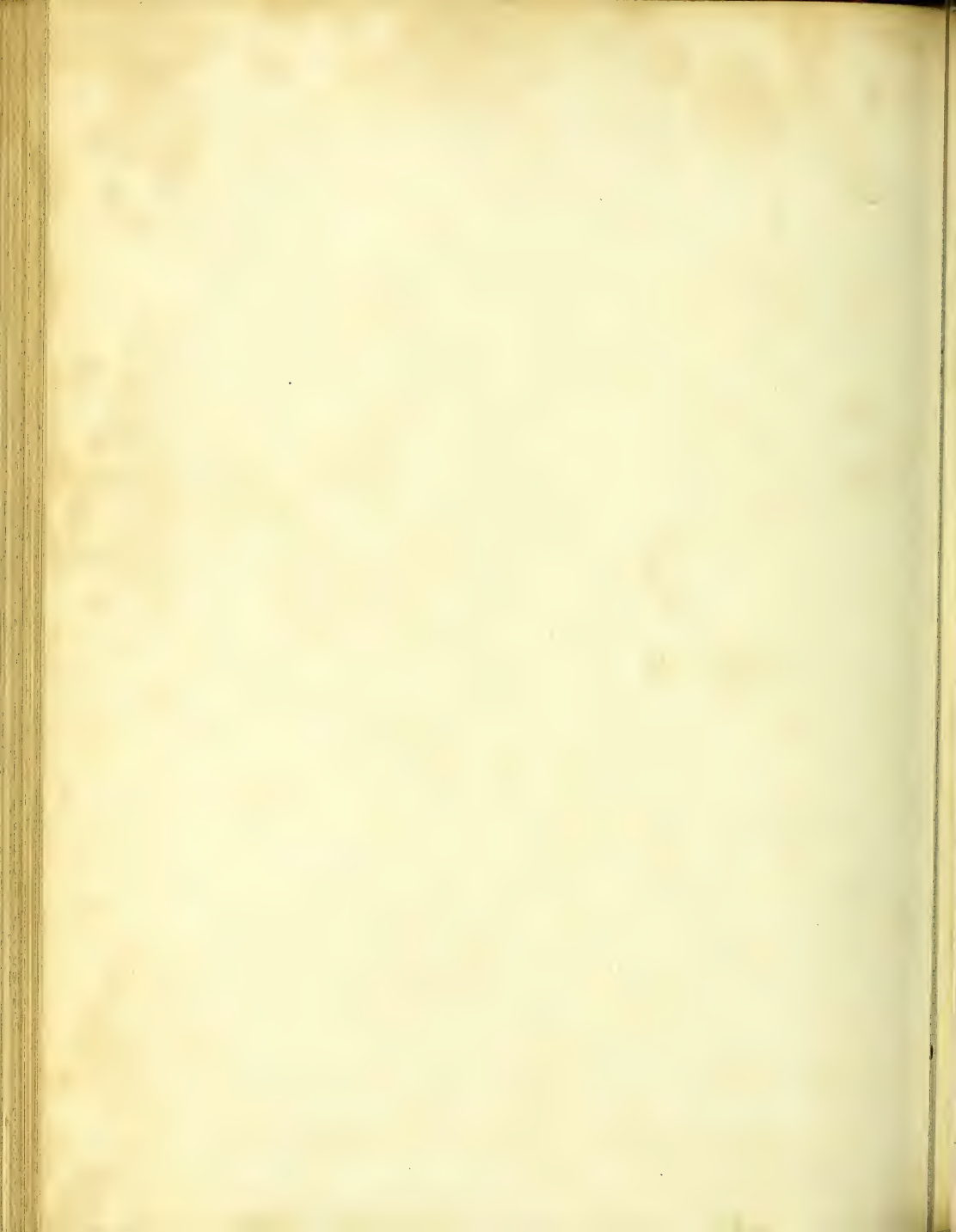


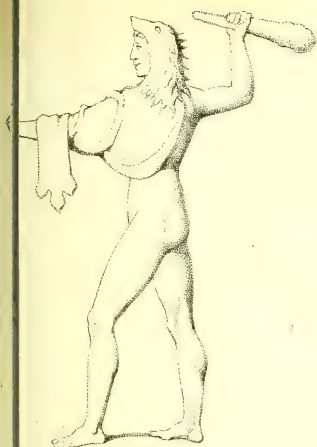




THE GROUP OF CUPID & PSYCHE, SEEN IN DIFFERENT VIEWS.

SCULPTURE.





*Hercules of Dedalus.  
from a small Bronze.*



*Cupid of Praxiteles.  
British Museum &c.*



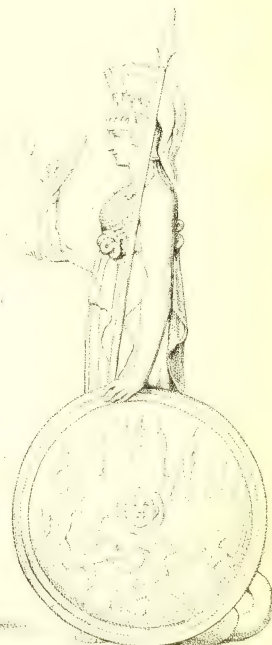
*Minerva of Diponius & Scyllus.  
in the Villa Albani.*



*Venus of Praxiteles.  
Verriero Statues.*

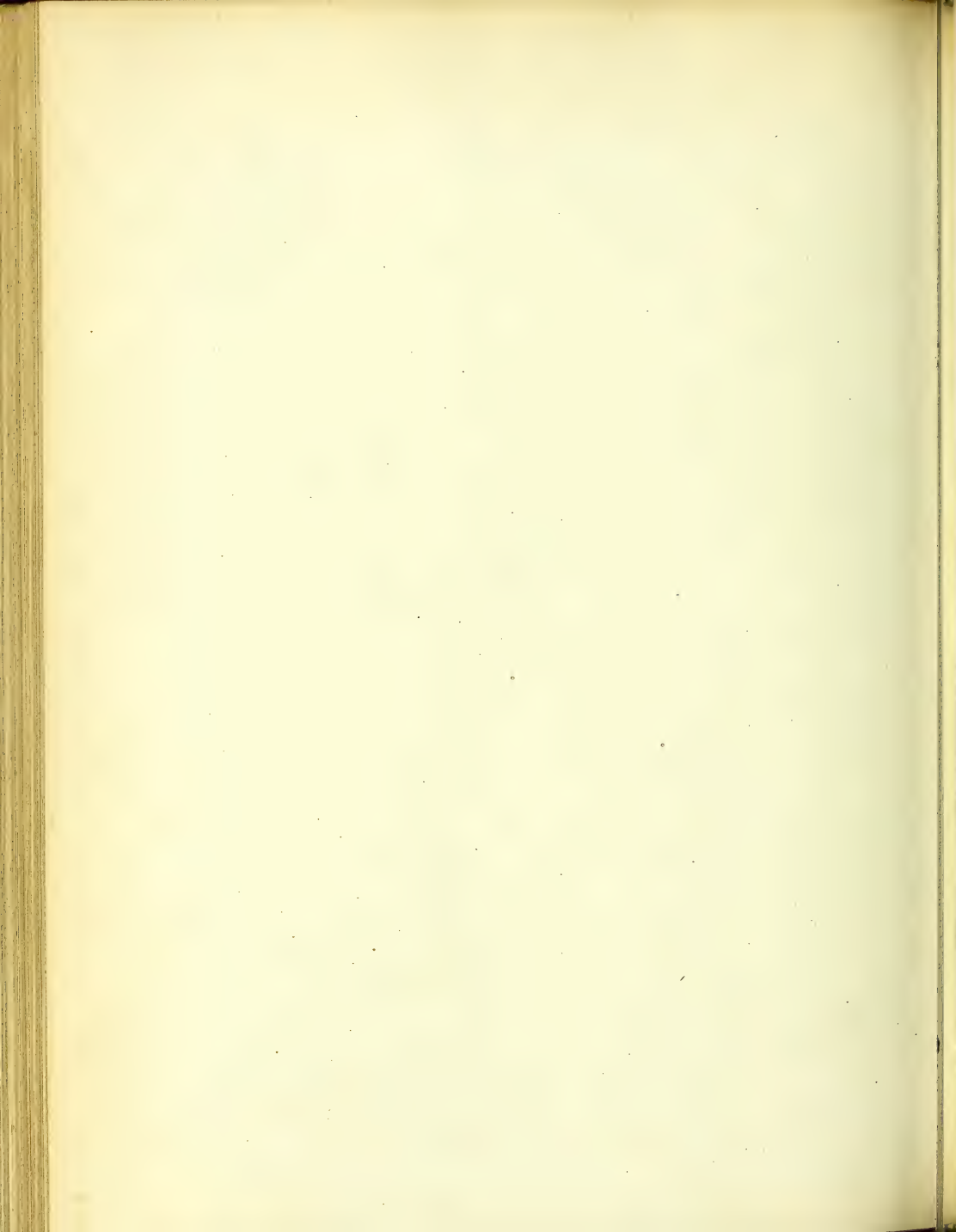


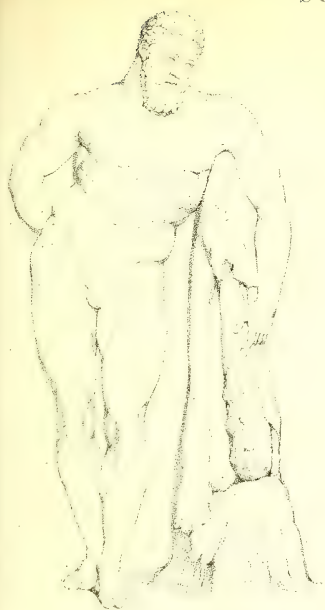
*Jupiter Olympius. See Pausanias. Ancient  
Statues. Coins & Gems.*



*Minerva of the Acropolis in Athens  
See Bunters Coins.*

Blake



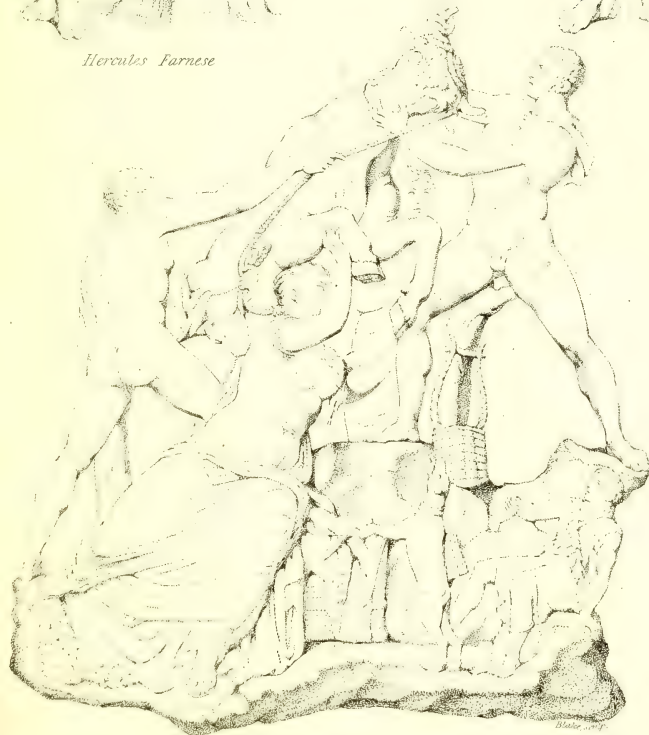


*Hercules Farnese*

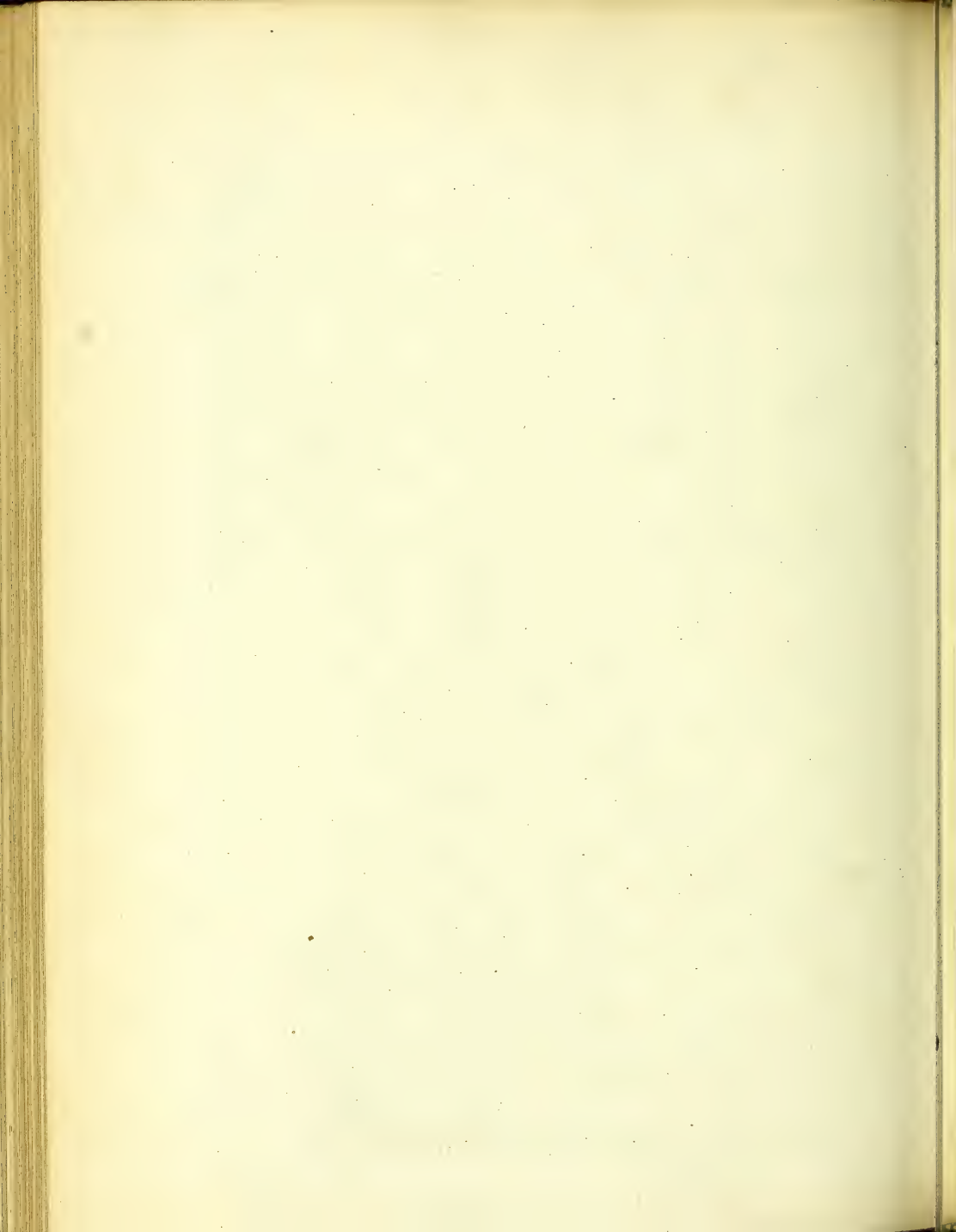


*Phocion*

*Dirce*









*Venus de Medici.*

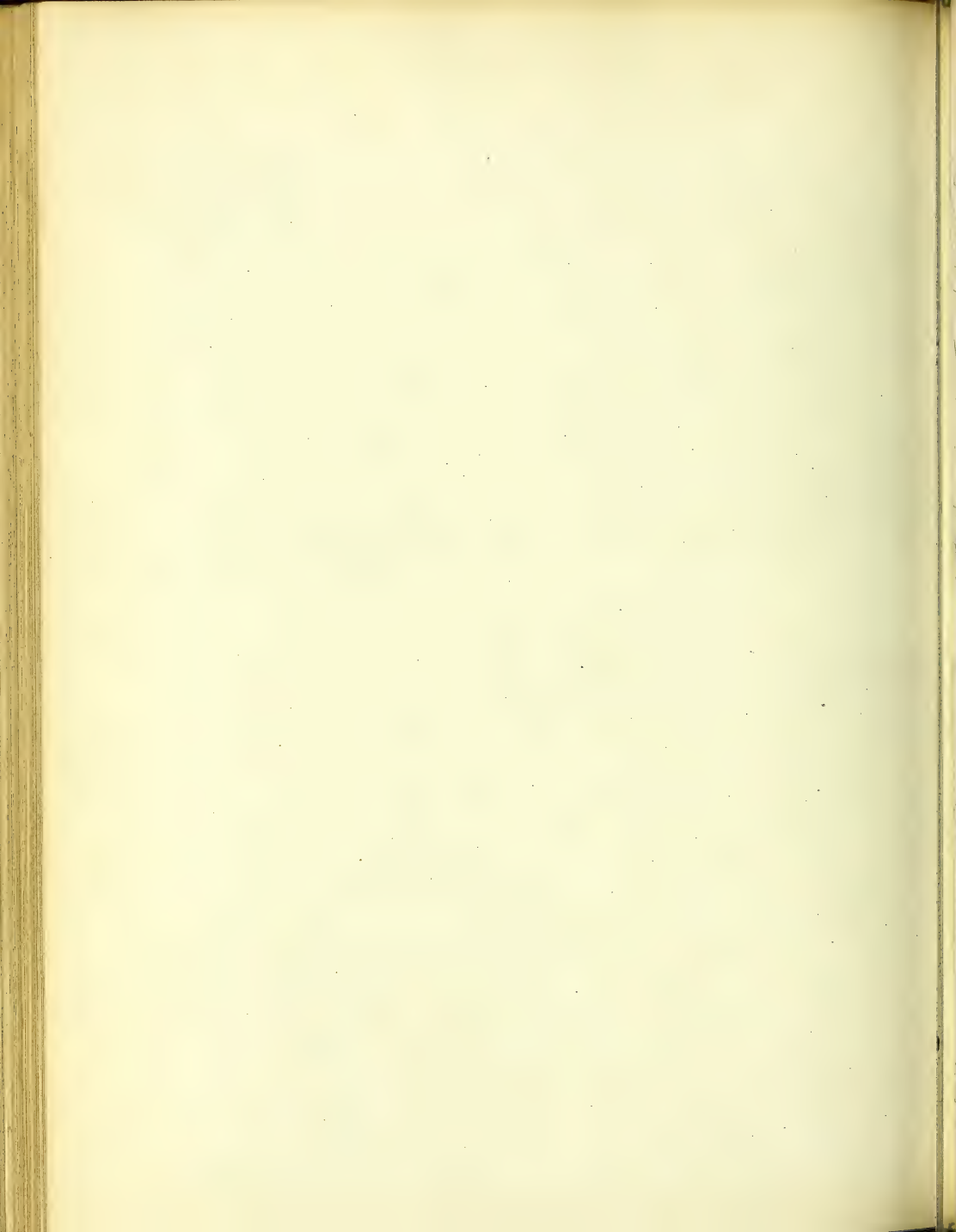


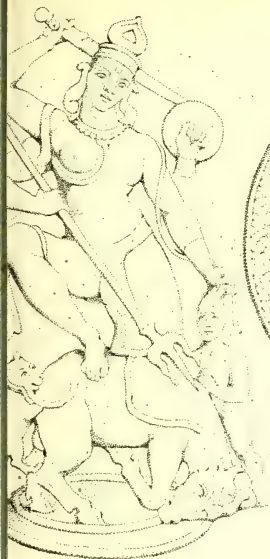
*Apollo Belvedere.*



*Laocöon.*

*Salto del et al.*

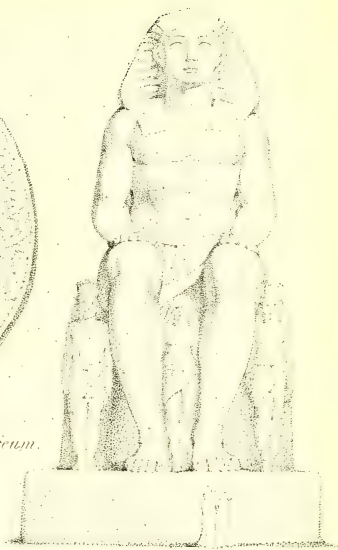




*Standing Mahishasura, a Vendo group.*



*An Etruscan Putna, in the British Museum.*



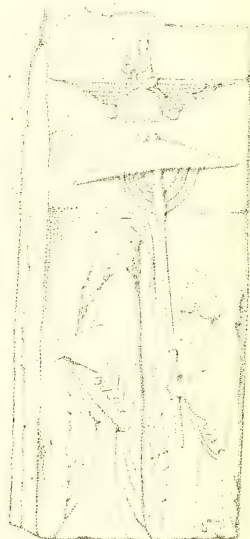
*A Colossal Statue, at Thebes.*



*Sculpture, at Persepolis.*



*A Chinese Statue.*



*Persian Sculpture, at Persepolis.*

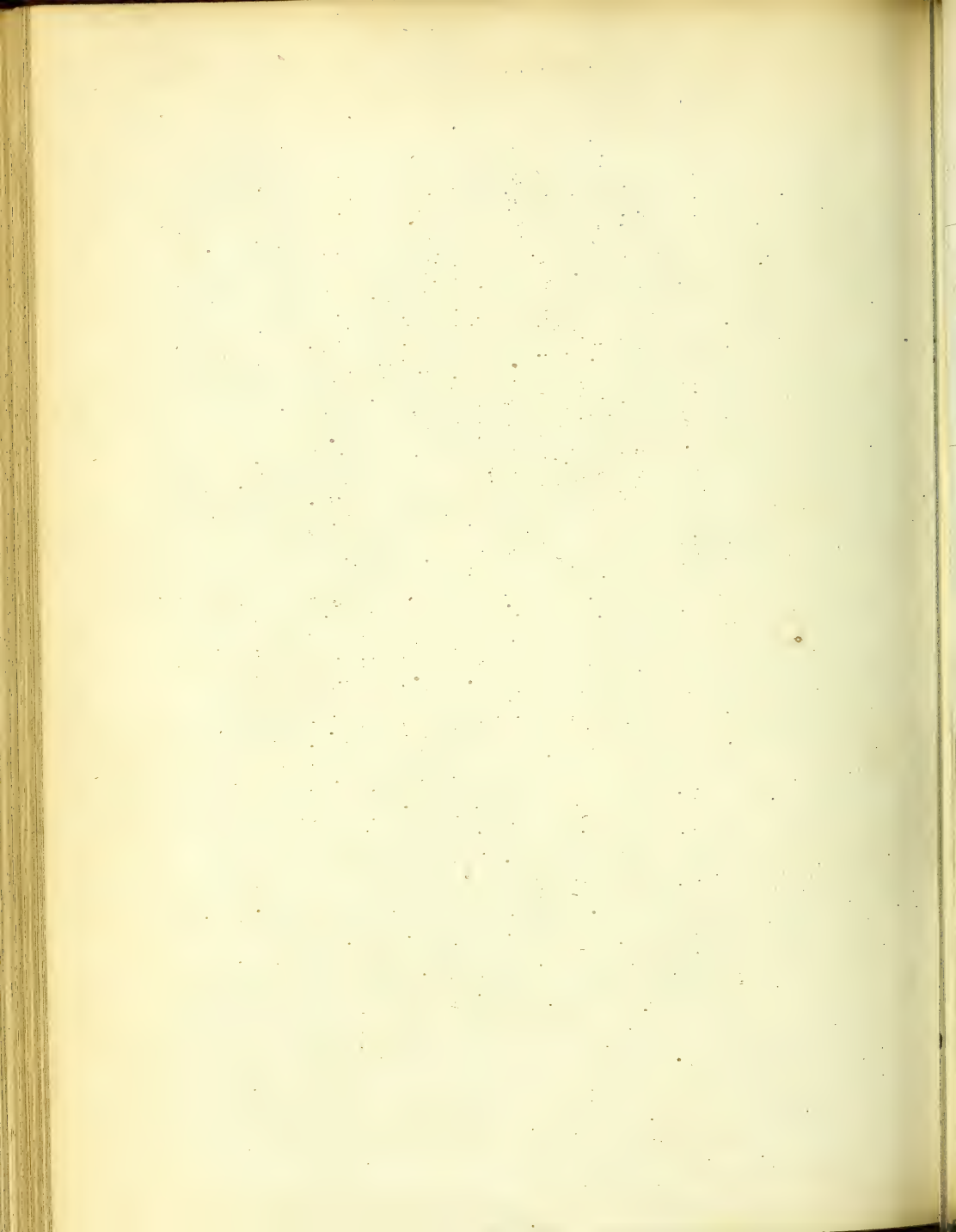




Fig. 1. N<sup>o</sup> 1.

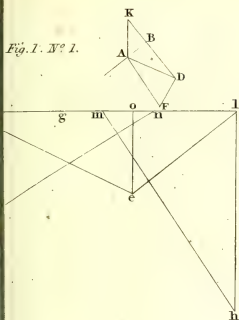


Fig. 1. N<sup>o</sup> 2.

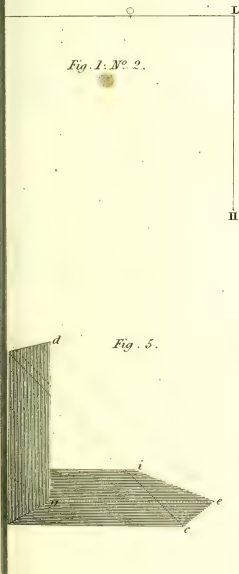


Fig. 5.

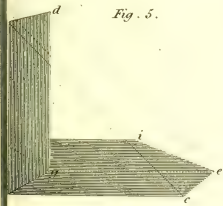


Fig. 3.

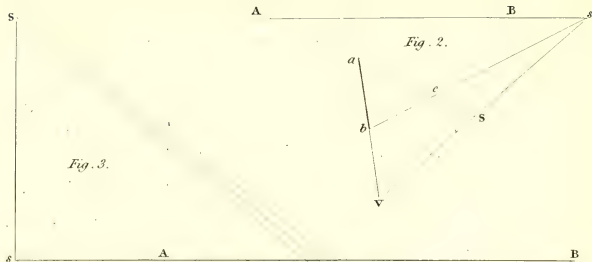


Fig. 2.

Fig. 4.

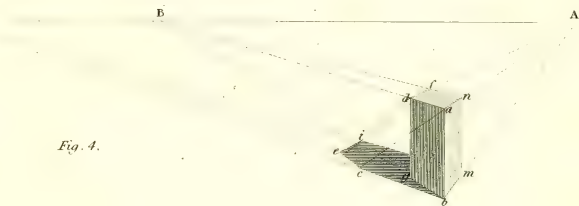
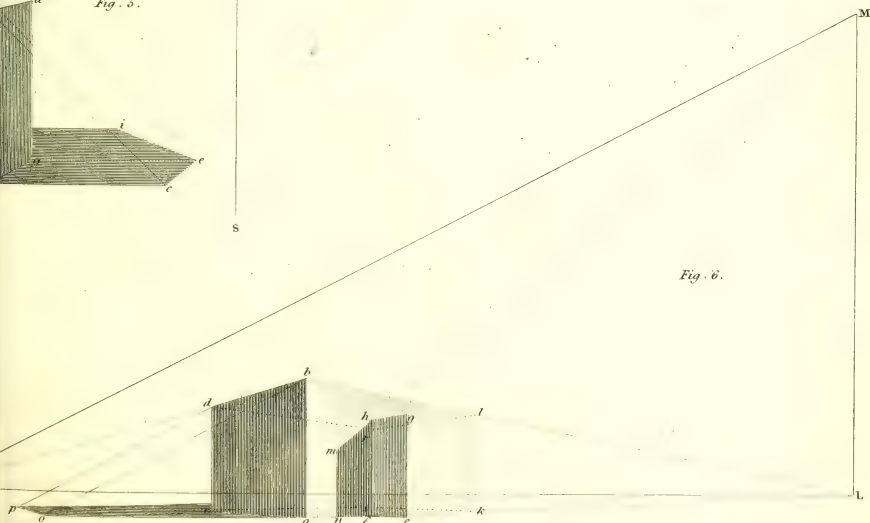
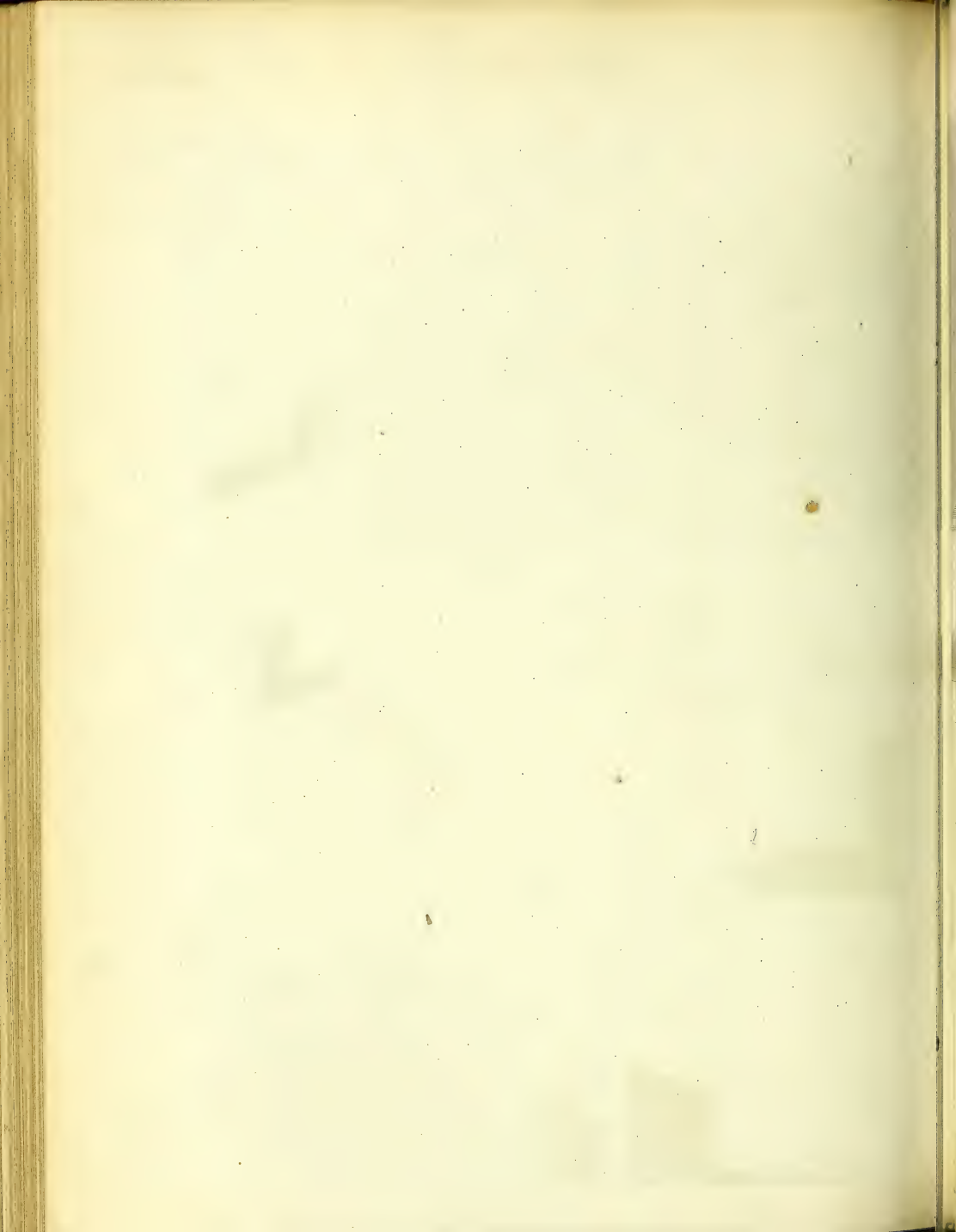


Fig. 6.





# SHADOW.

PLATE II.

Fig. 5.

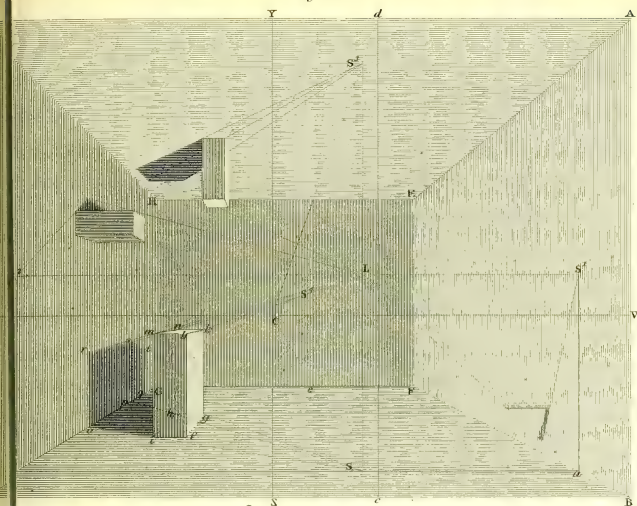


Fig. 1.

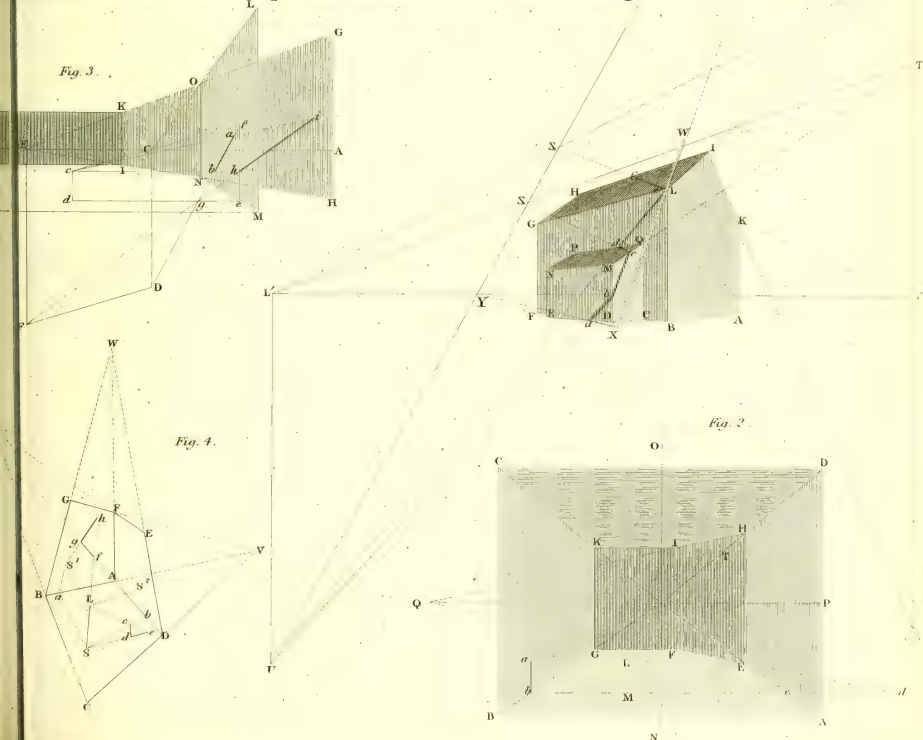


Fig. 3.

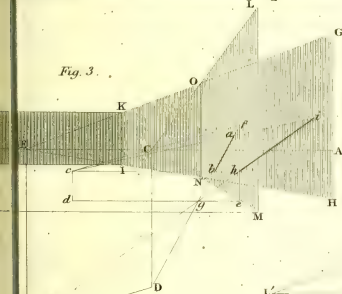


Fig. 4.

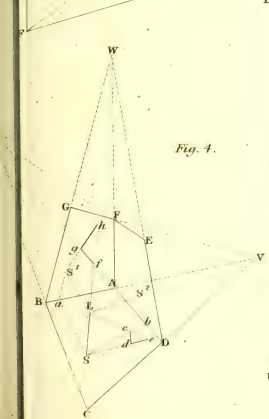
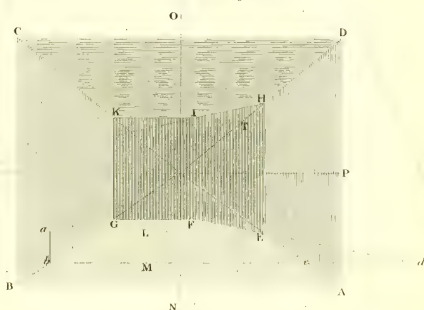


Fig. 2.





*Capt. Bolton's machine for drawing Bolts.*

Fig. 1.

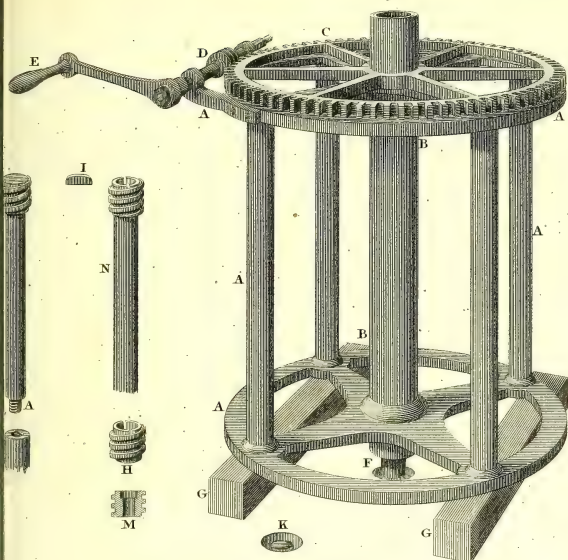
*Phillips's tubes for driving bolts.*

Fig. 3.

Fig. 2.

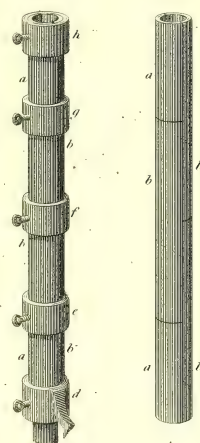


Fig. 4.

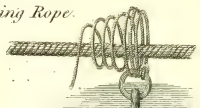
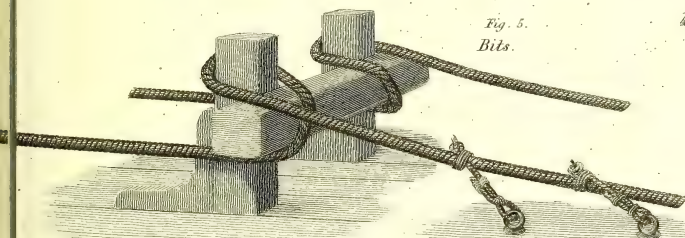
*Ring Rope.*Fig. 5.  
*Bits.*

Fig. 5.

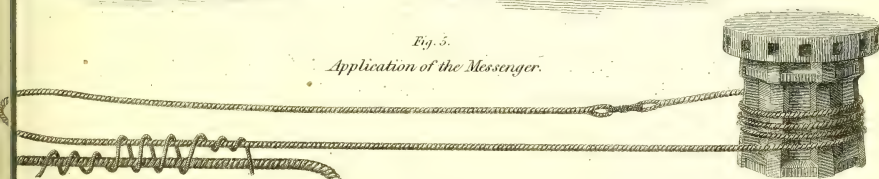
*Application of the Messenger.*

Fig. 7.

*Nippers*

Fig. 6.

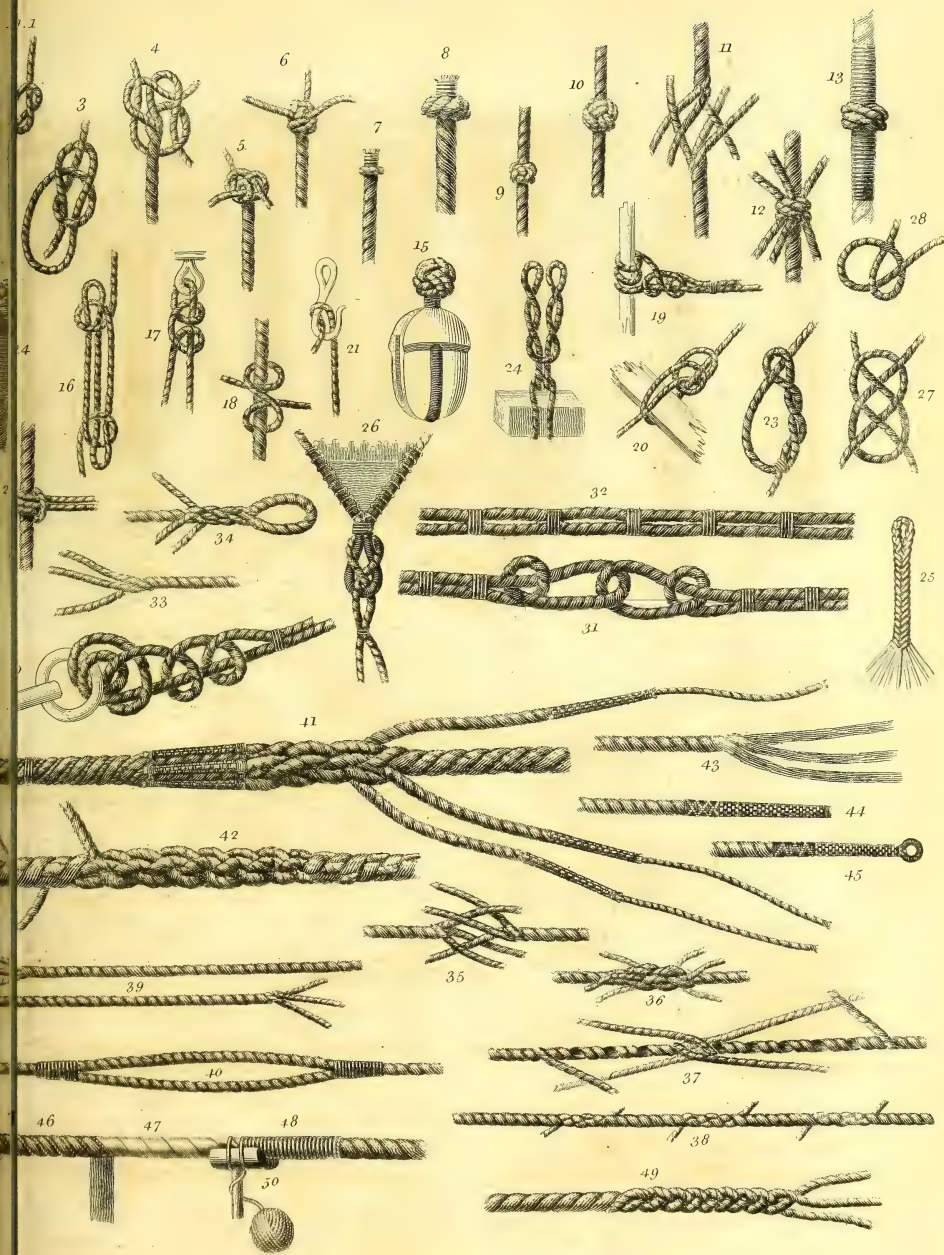






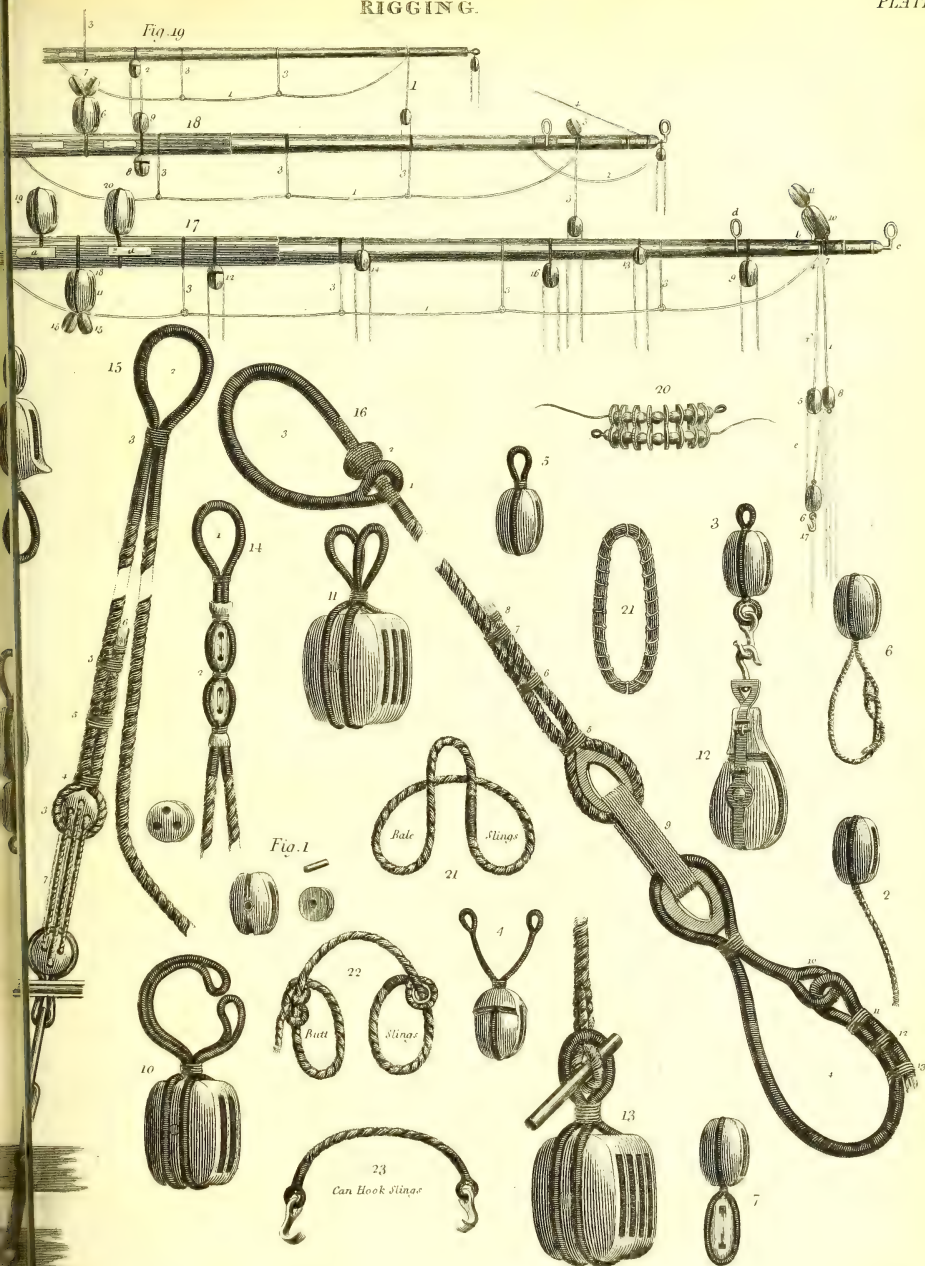
## RIGGING.

PLATE I.

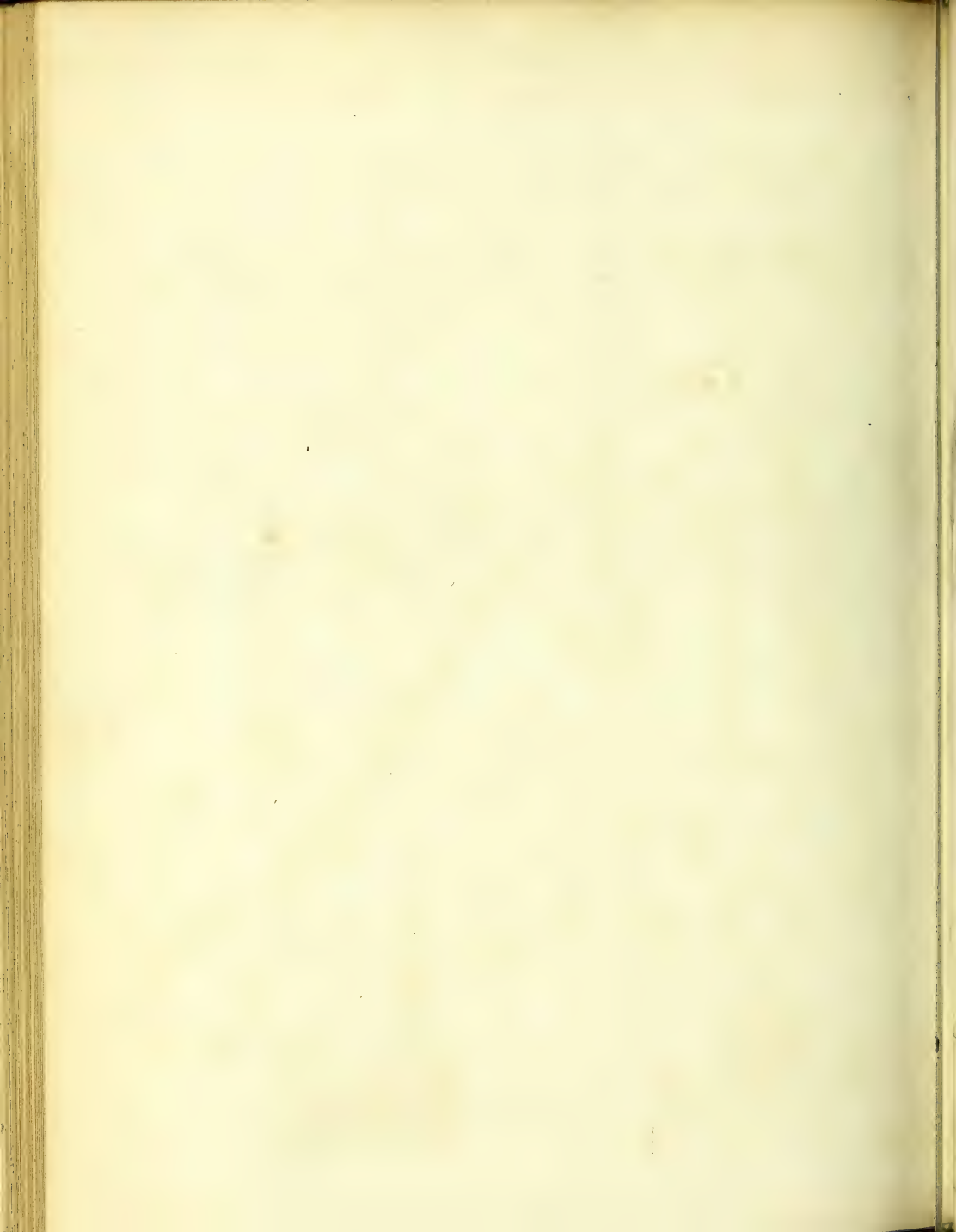




## RIGGING.









# SHIPS.

PLATE IV  
(Rigging IV III.)

Fig 1.

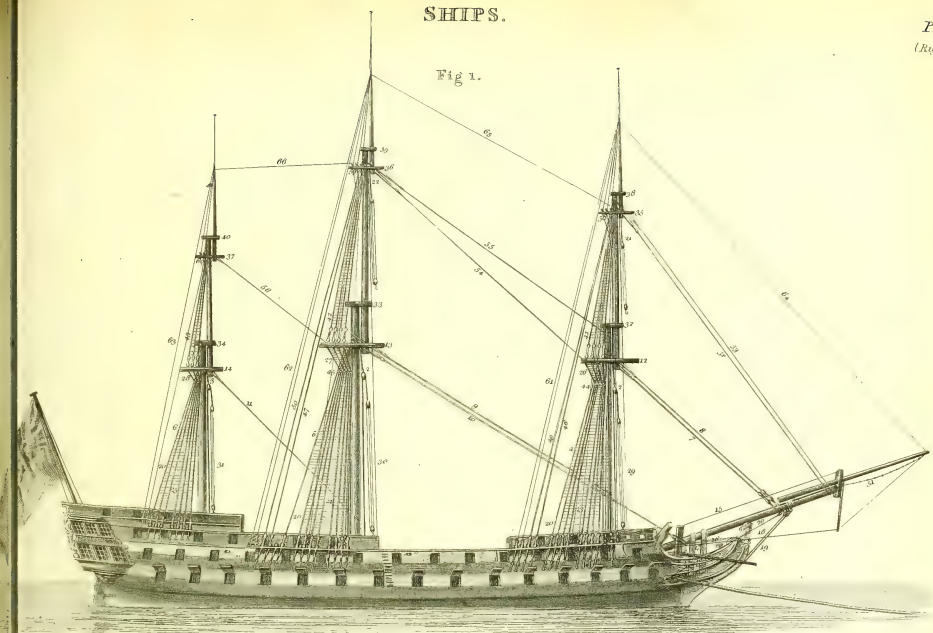
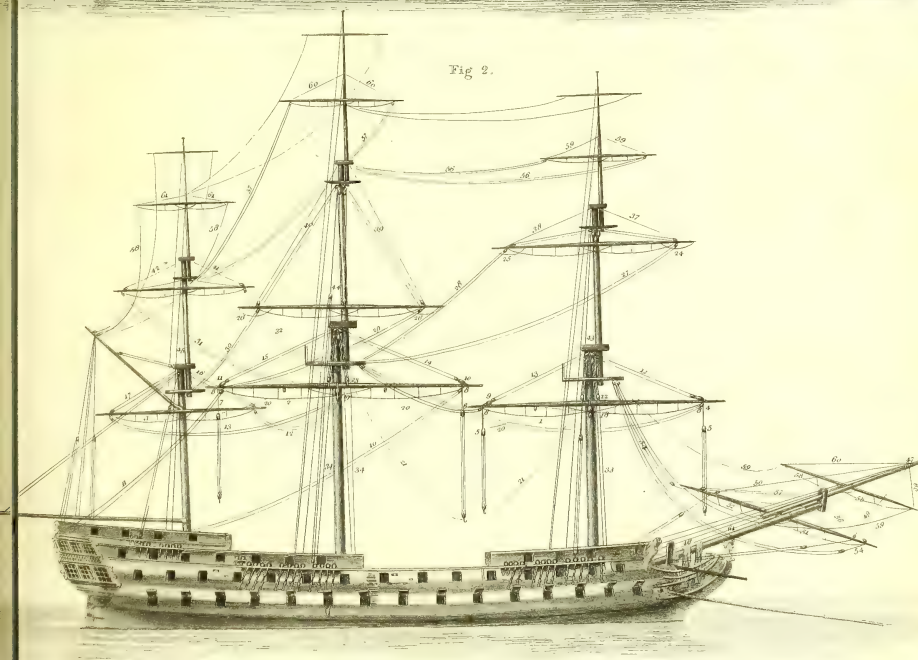


Fig 2.



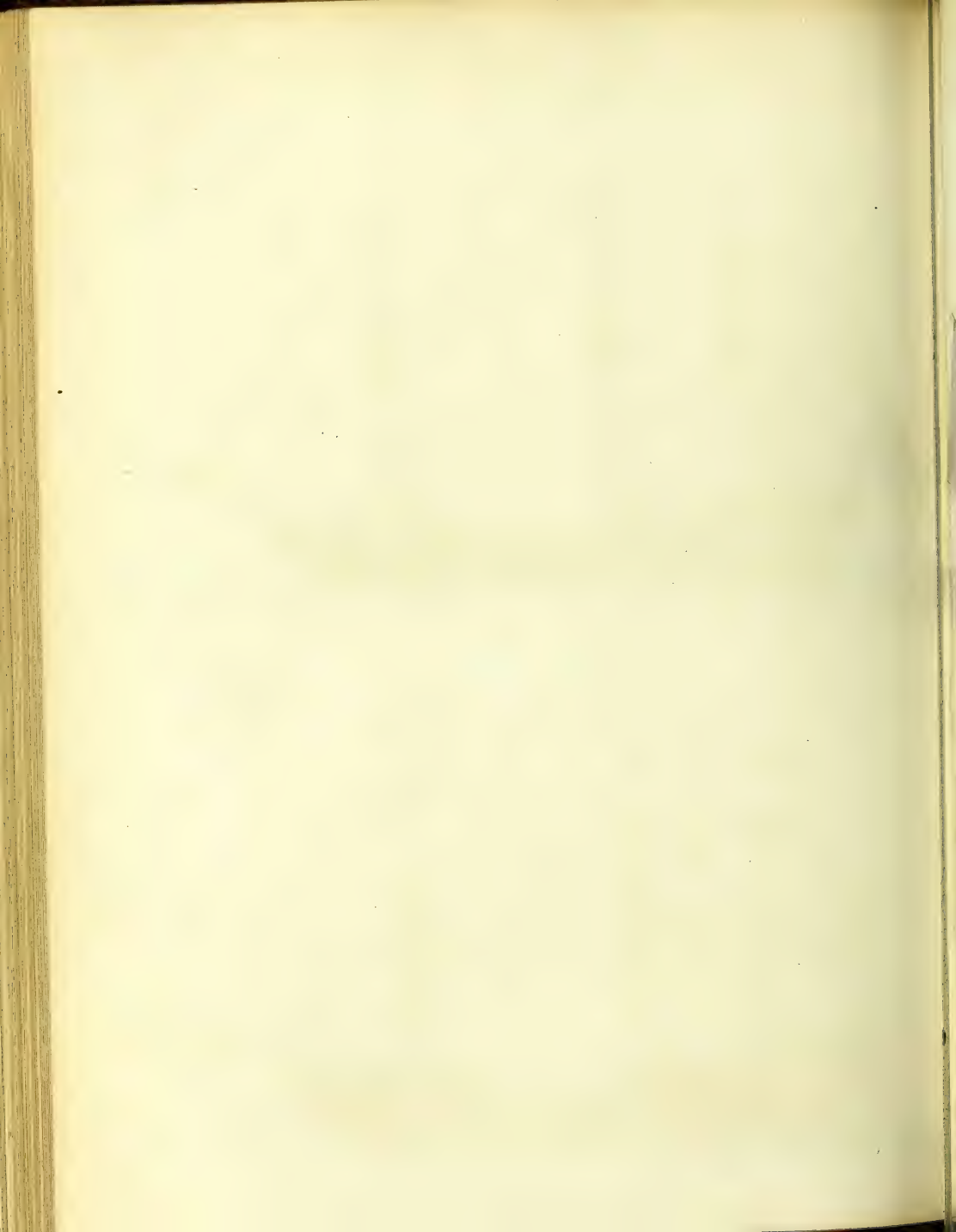


Fig 1.

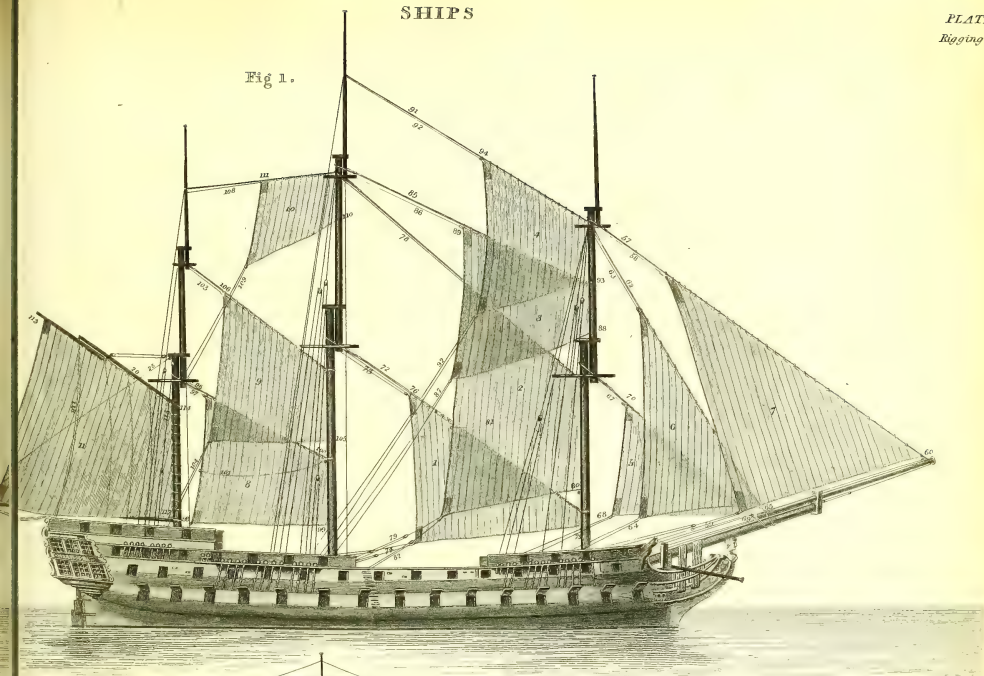
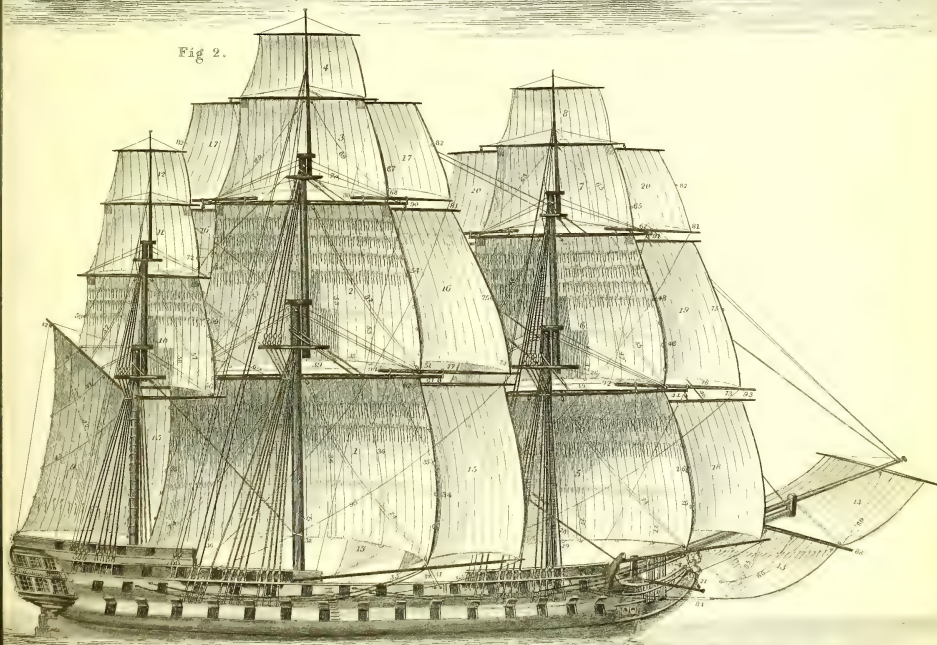
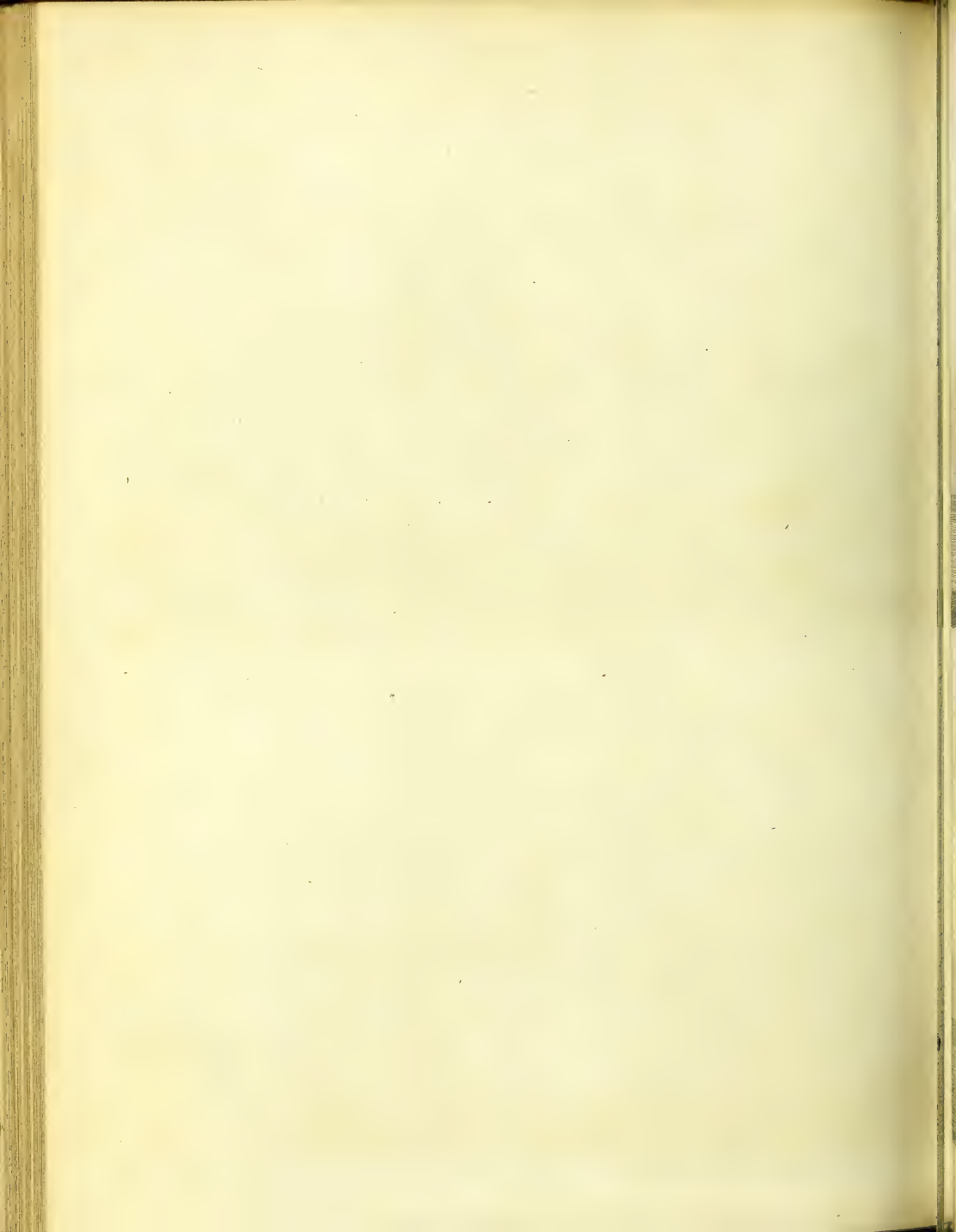


Fig 2.







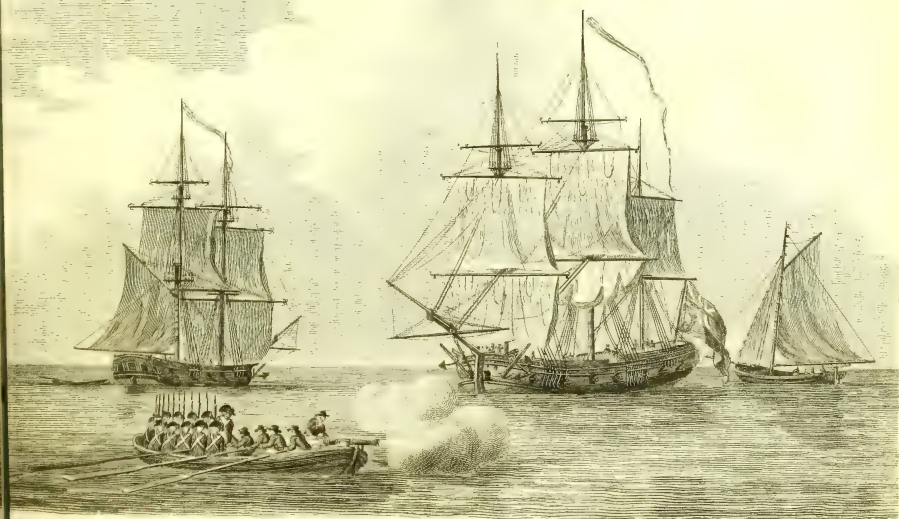
*British Men of War.*

First Rate.

Man of War's Barge.

Seventy four.

Lugger.



Fire Brig.

Flat Bottomed Boat.

Gun Vessel / the Wolverine.

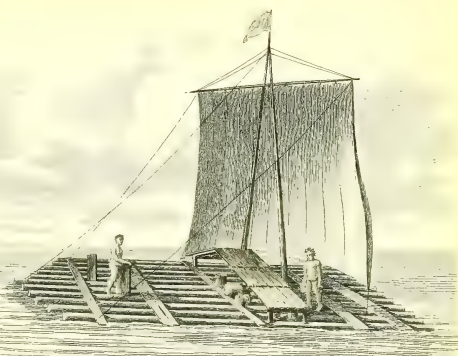
Man of War's Long Boat.



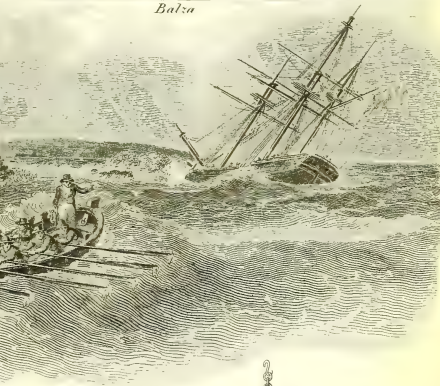




*Pahu*



*Balza*



*Life Boat*

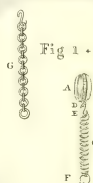
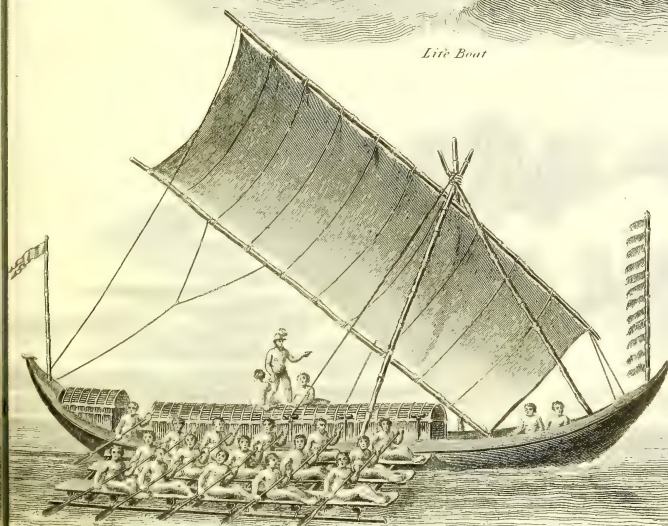
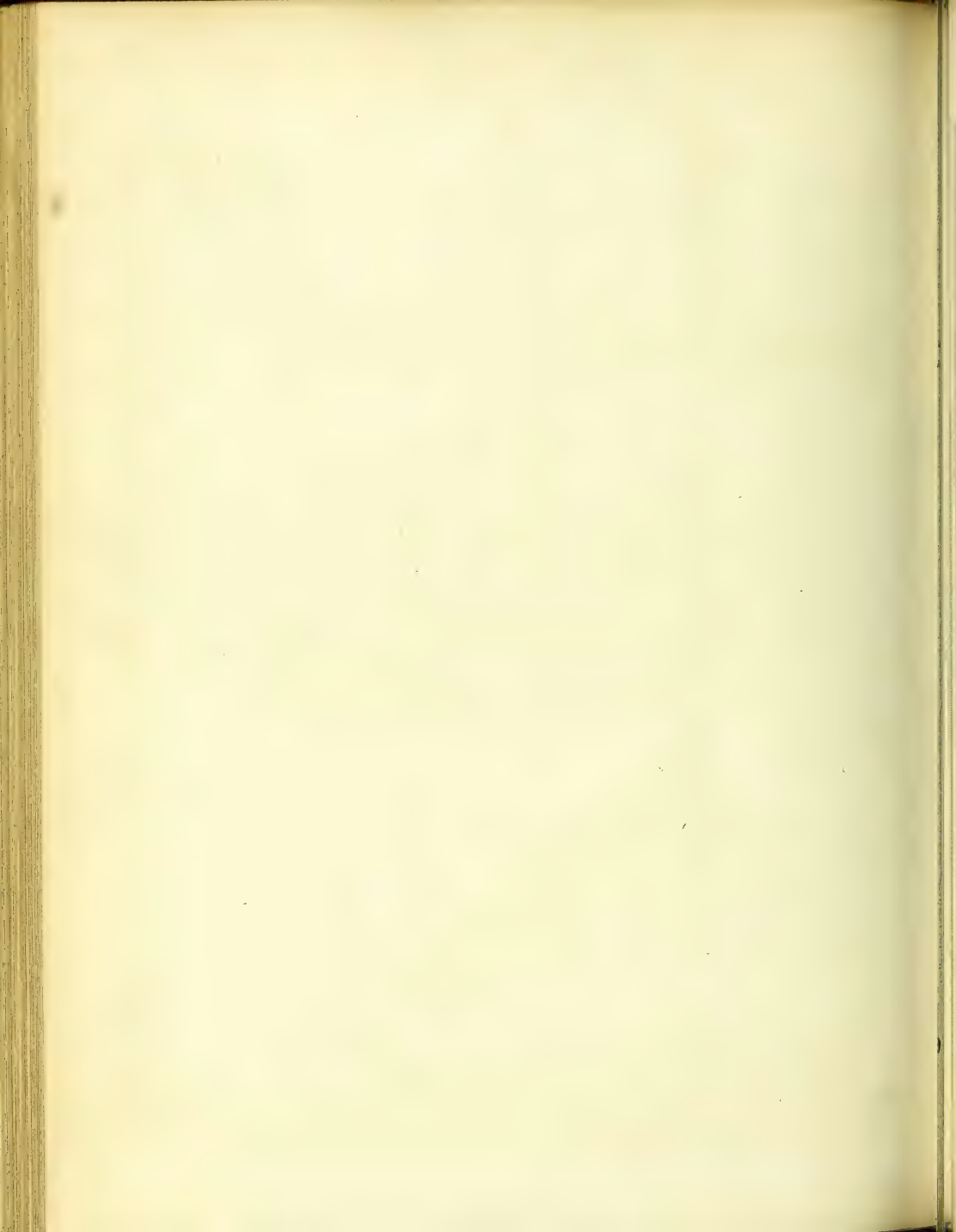


Fig 1.

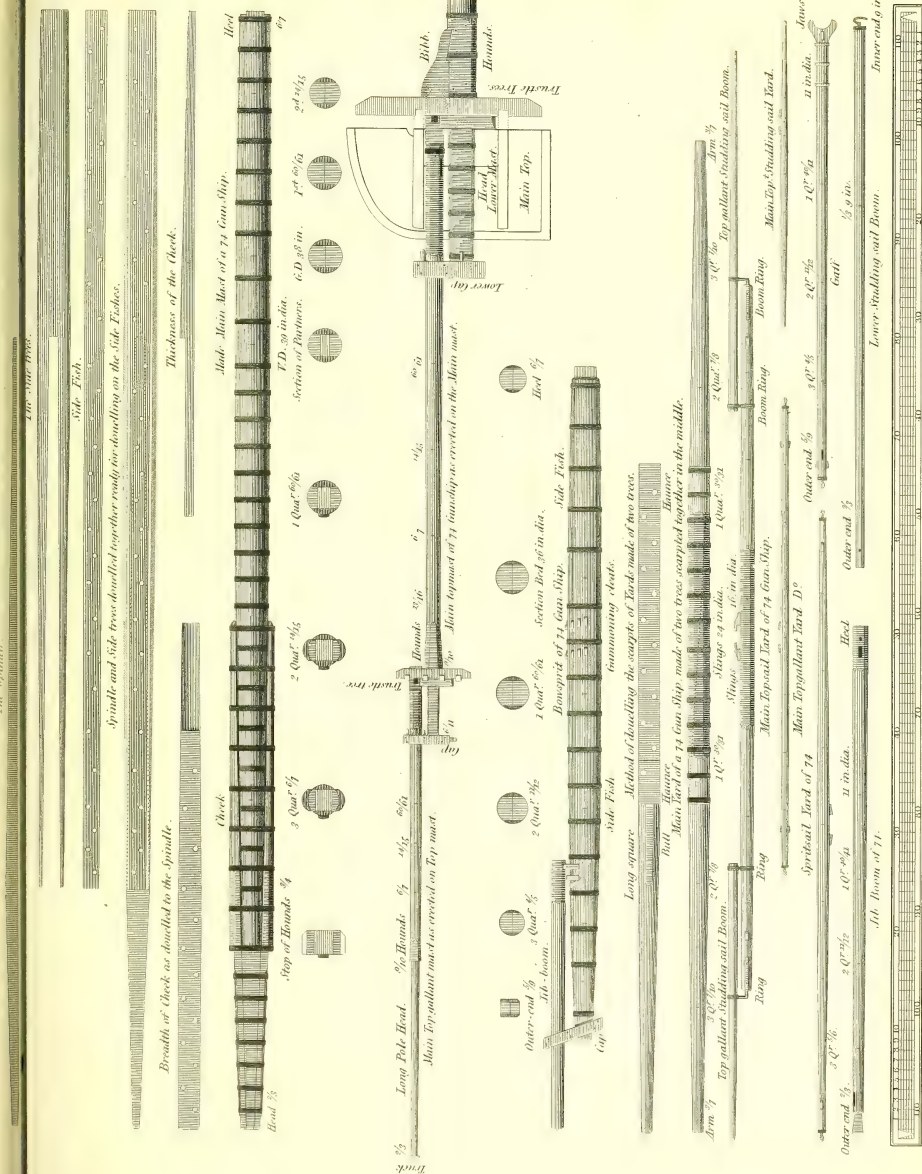


*Caracore*

\* Spring Block



*The different prices which compose the made Main Mast of a 74 Gun Ship, &c.*

*U. Oliver Del*

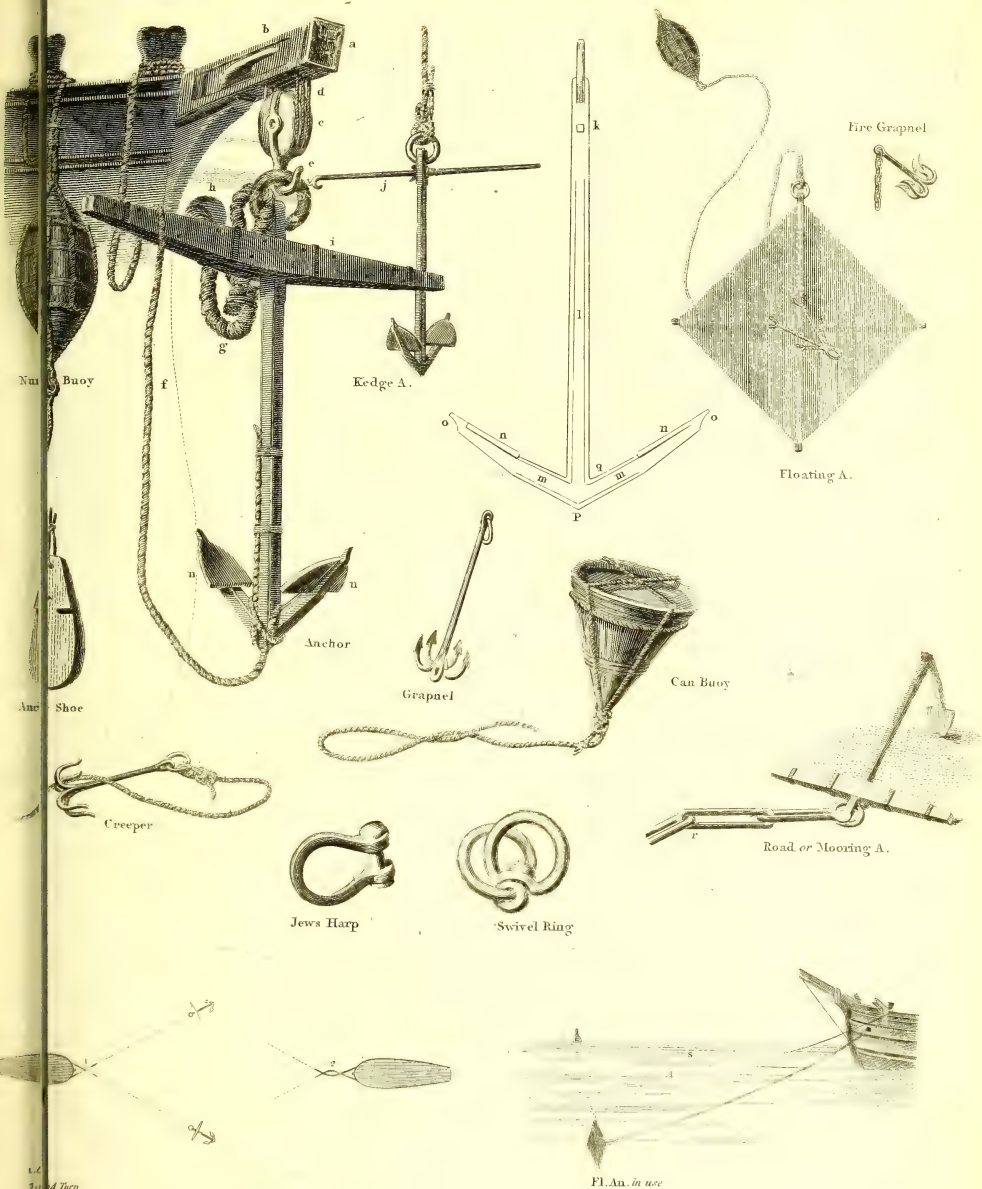
*Published as the Act directs, 1850, by Longman, Hurst, Rees, Orme & Brown, Paternoster Row.*

W. Lowry, Sc.









a. Cat Block. b. Cat. c. Cat Block A. d. Fall. e. Cat Hook. f. Buoy Rope. g. Bawse. h. Bawse Hole. i. Stock. j. Shifting Stock. k. Nut for securing the Stock. l. Shank. m. Arm. n. Fluke. o. Bill. p. Crown. q. Throat. r. Mooring Chain. s. Buoy Guy.



# SHORT HAND.

The Alphabet

Invented by John Byrom, M.A. and F.R.S.

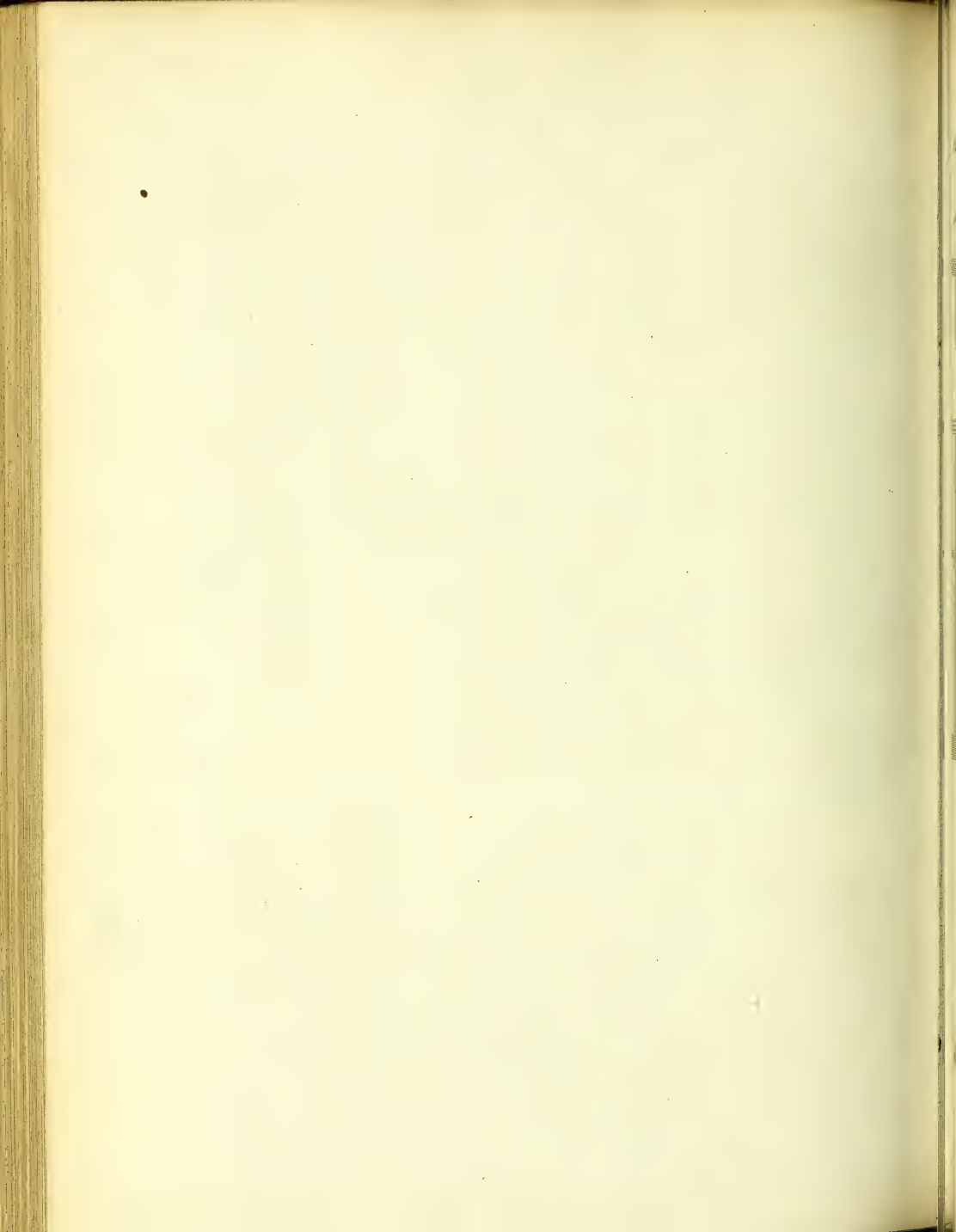
LETTERS.	WORDS.	PREPOSITIONS.	TERMINATIONS.	Miscellaneous EXAMPLES.
—	I	—	—	Answer
) )	be; but	Be-	-able	Cypher
—, e	(s, or k.)	—	—	Departure
(	and	de-	-ed	Entertained
—	—	—	—	Tail
\	of	for-	{ -ful	Tail
e	{ again	—	—	Forward
	{ against	—	—	Library
9 d	have; had	—	—	Matrimony
—	I	—	—	Saltions
e	{ can	{ com-	-ical	Summation
	{ could	{ con-	—	Overcome
e p e	all; always; altogether	—	—	Perplex
)	{ am	{ magni-	-ment	Revengeful
	{ amongst	{ mis-	—	Short-hand
(	{ an	{ ante- or anti-	{ -ence	Square
	{ in	{ en- or infer-	{ -ent	Substance
	{ under	{ un- or under-	{ -ness	Training
—	Oh!	—	—	Withouts
)	upon	per- pre- or pro-	—	Upon
9	question	—	—	Zephyr
/	or	re-	-ary -ing	
—	{ as	{ agis-	{ -ation	Common CONTRACTIONS.
	{ to	{ circum-	{ -ation	
	{ as	{ sub- or super-	{ -ation	{ -self -never
—	the	trans-	-ity	Dr. e Doctor
—	you	—	—	Etc. r Et cetera
\	—	—	—	Mr. ~ Master
9 d	will; would	with-	-ward	Mrs. ~ Mistress
9 9	except; exercise	ex-; extra-	—	MS. ~ Manuscript
9	yets	—	—	NB. ~ Nota Bene
—	—	—	—	P.S. ~ Postscript
9	which	—	—	Rev. ~ Reverend
e 6	shall; should	—	-ship	Viz. ~ Videlicet
( \	that	—	—	

## Vowels' Places.

a, e, i, &c.    u, o, &c.    o, e, s, &c.    a, u, w, &c.  
 a, m, e, n, &c.    u, m, n, e, &c.    a, n, e, n, &c.    u, n, n, e, &c.

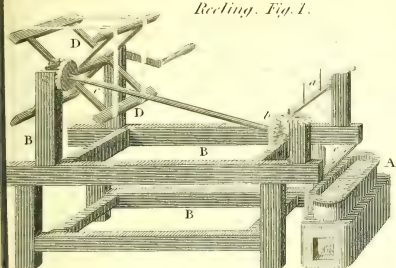
## Figures.

1 2 3 4 5 6 7 8 9 0  
 ~ 1 / \ ) — ( ) '

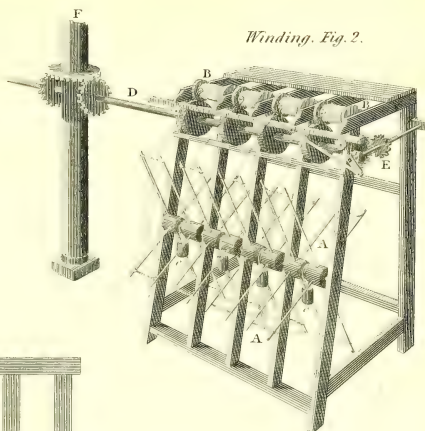


# SILK MANUFACTURE

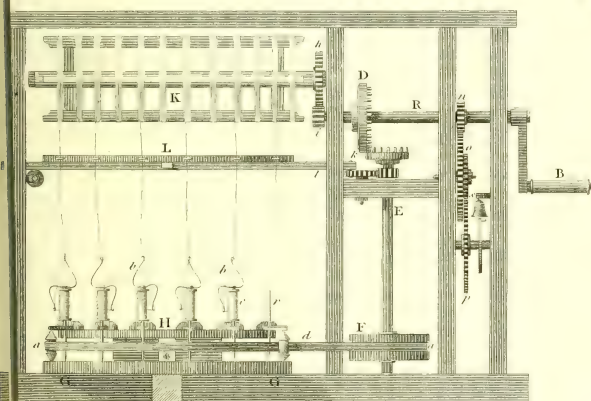
*Reeling. Fig. 1.*



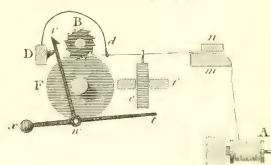
*Winding. Fig. 2.*



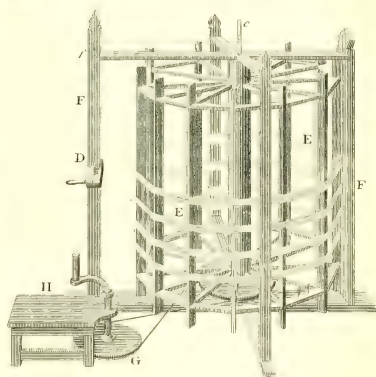
*Throwing. Fig. 3.*



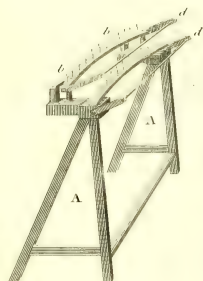
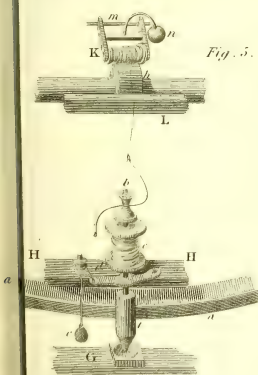
*Doubling. Fig. 4.*



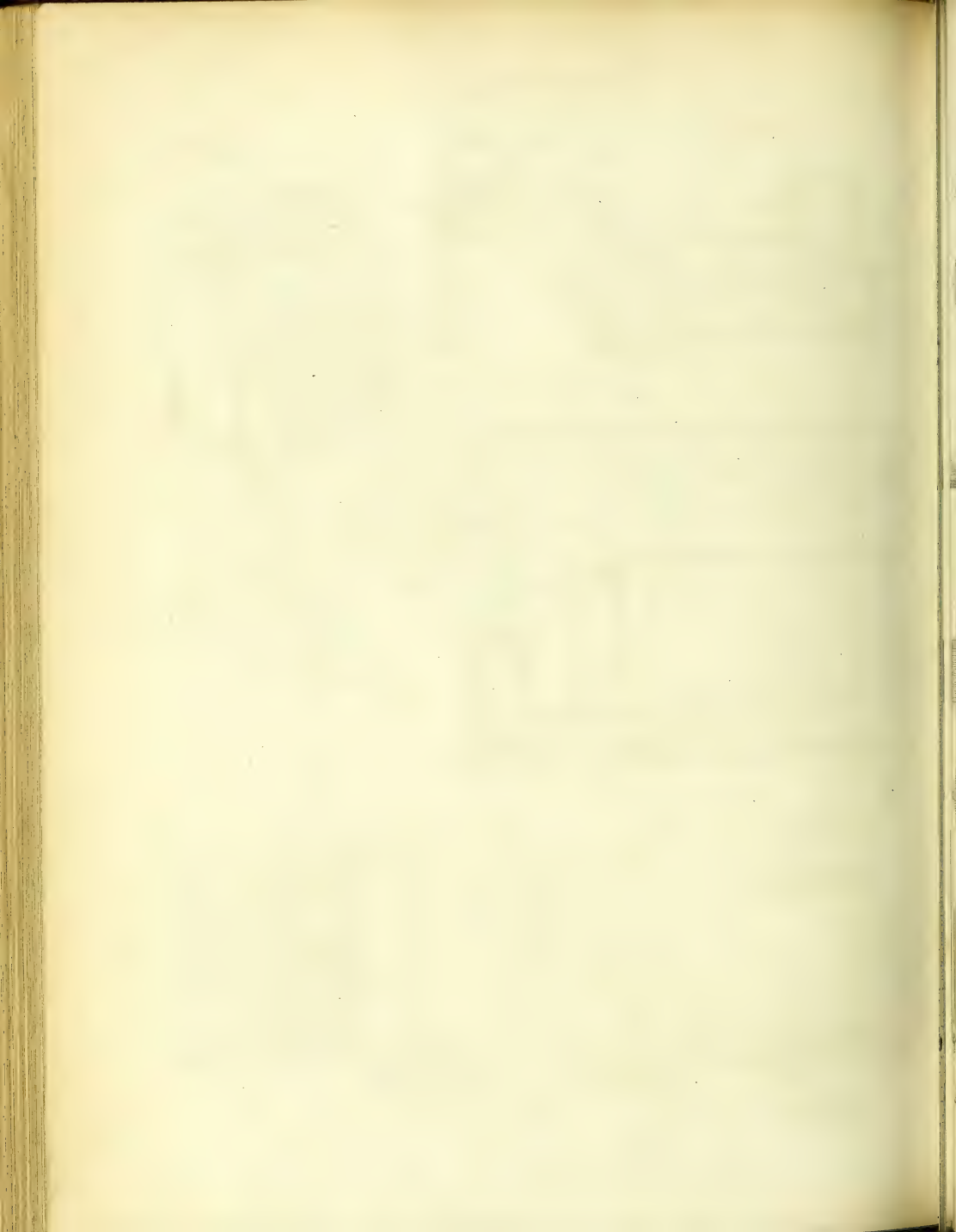
*Warping. Fig. 6.*



*Fig. 5.*

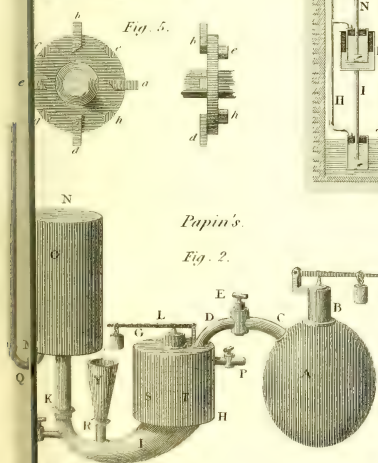
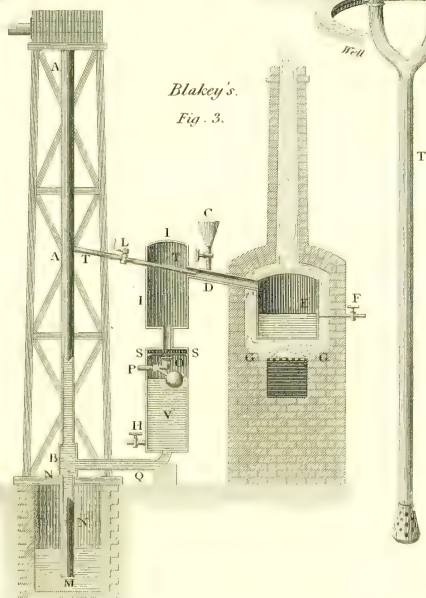
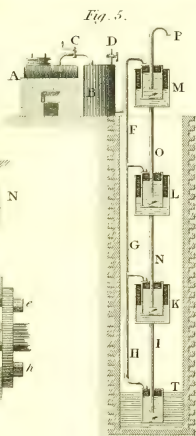
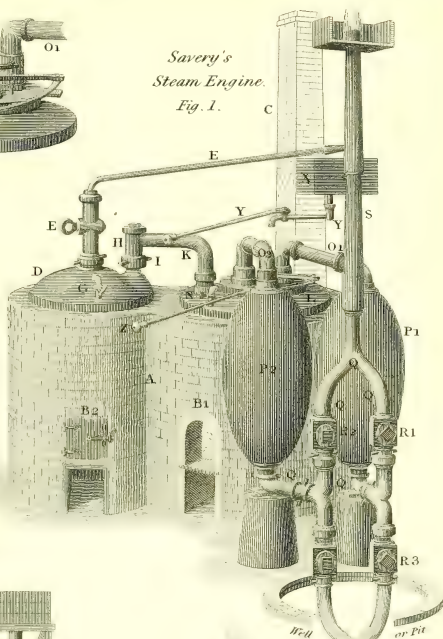
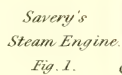
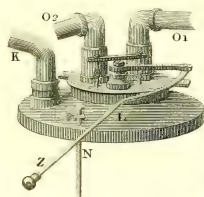
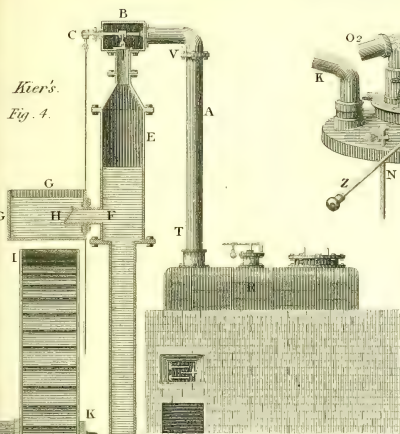


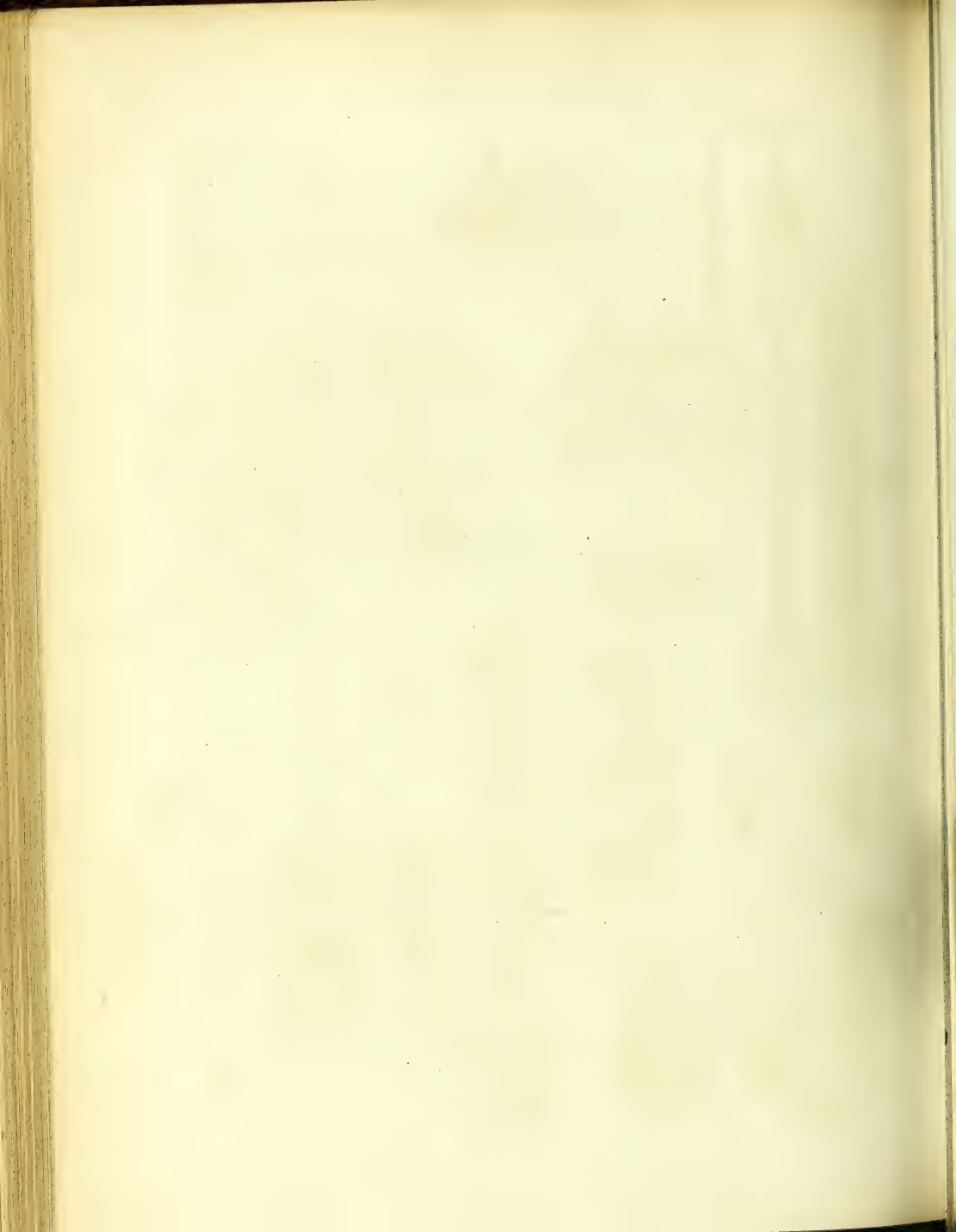




## STEAM ENGINES

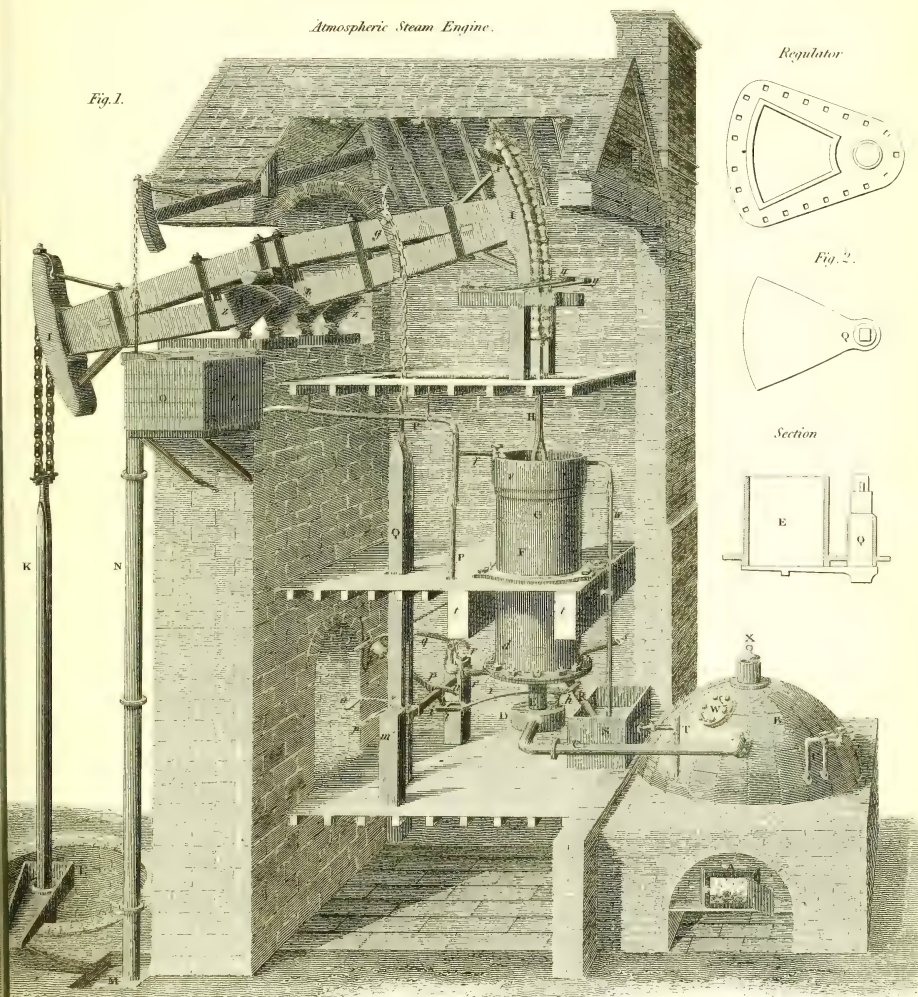
PLATE I.



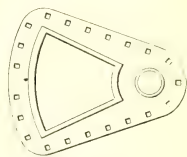


*Atmospheric Steam Engine.*

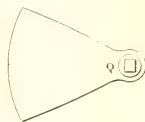
*Fig. 1.*



*Regulator*



*Fig. 2.*



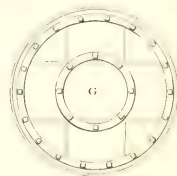
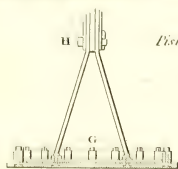
*Section*



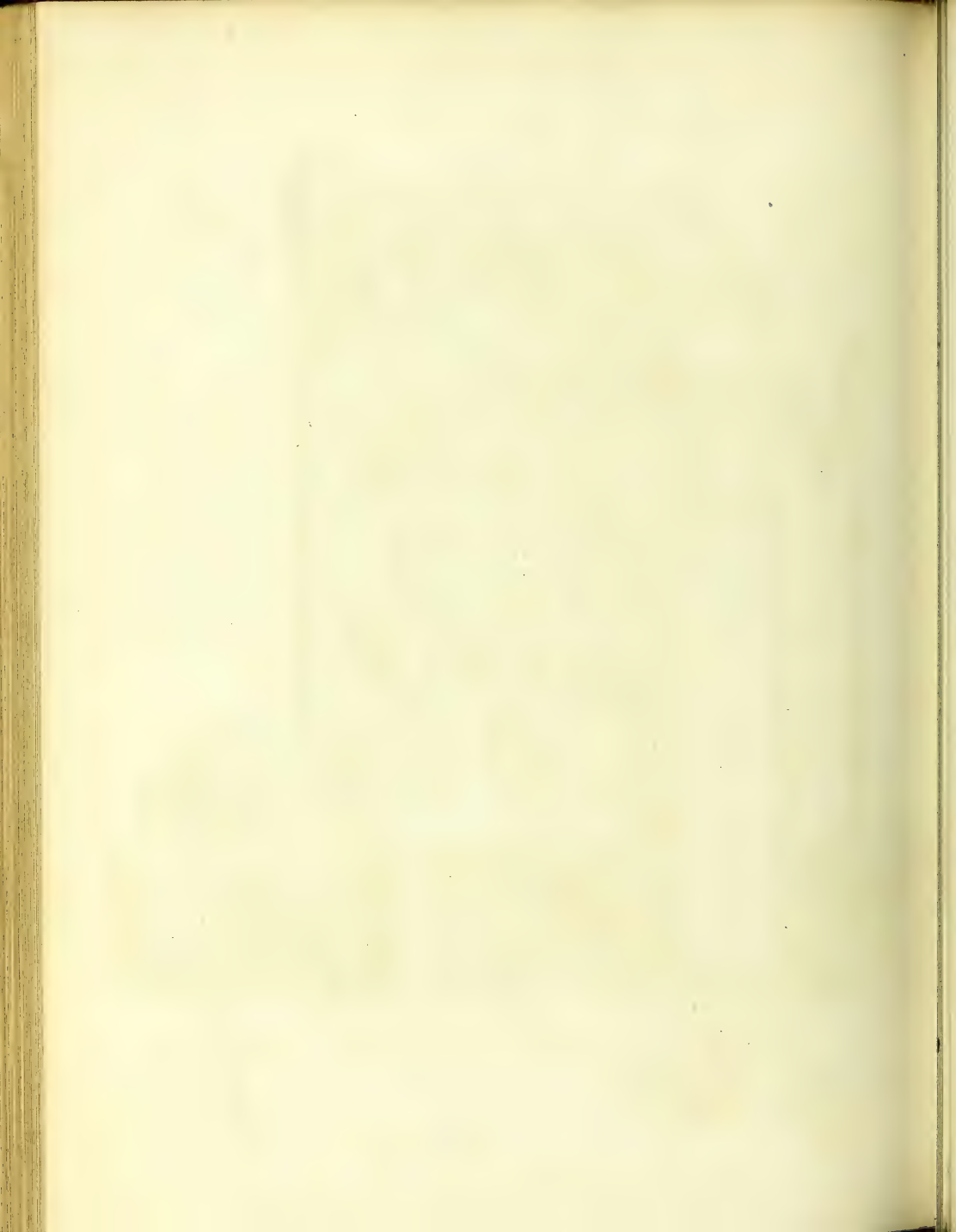
*Injection Cap.  
by M. Smeaton*



*Piston*





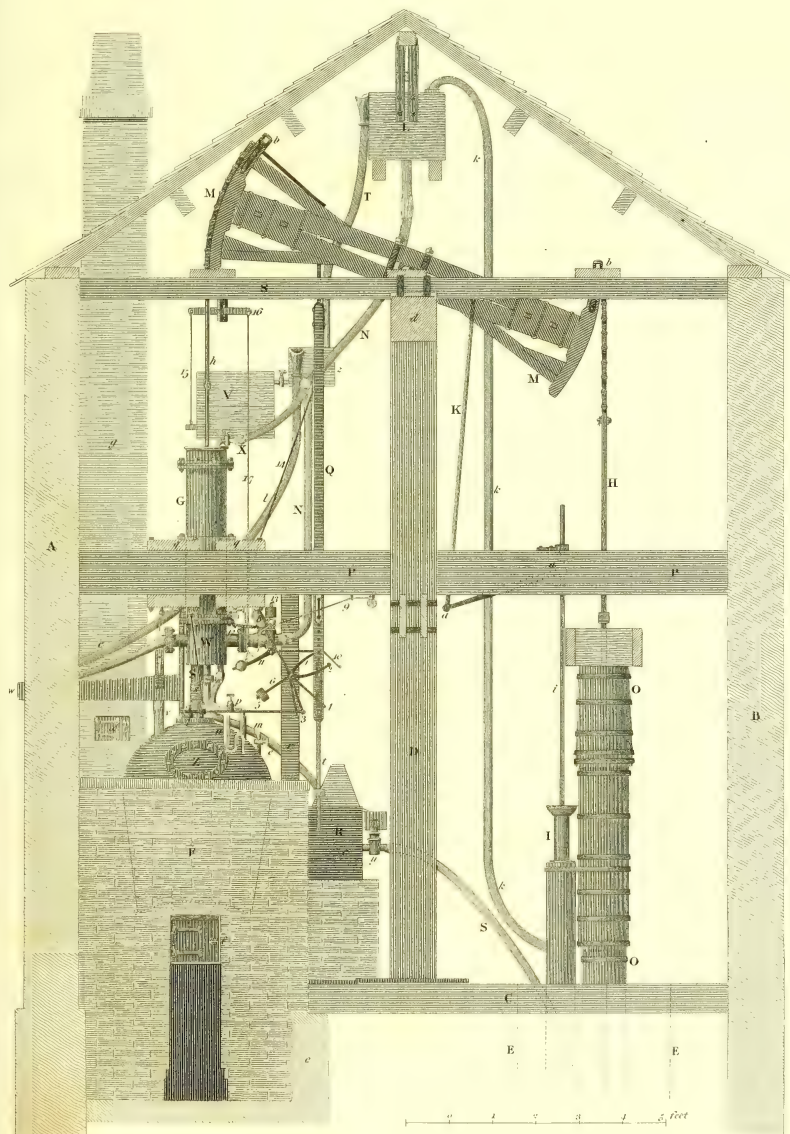




# STEAM ENGINE.

Plate I.

*On the principle of NEWCOMEN, as constructed by SMEATON.*





# STEAM ENGINE.

PLATE III & IV

## M<sup>r</sup> WATT'S ENGINE.

Fig. 1.

Single acting ENGINE  
for pumping at  
CARLSEA WATER WORKS.

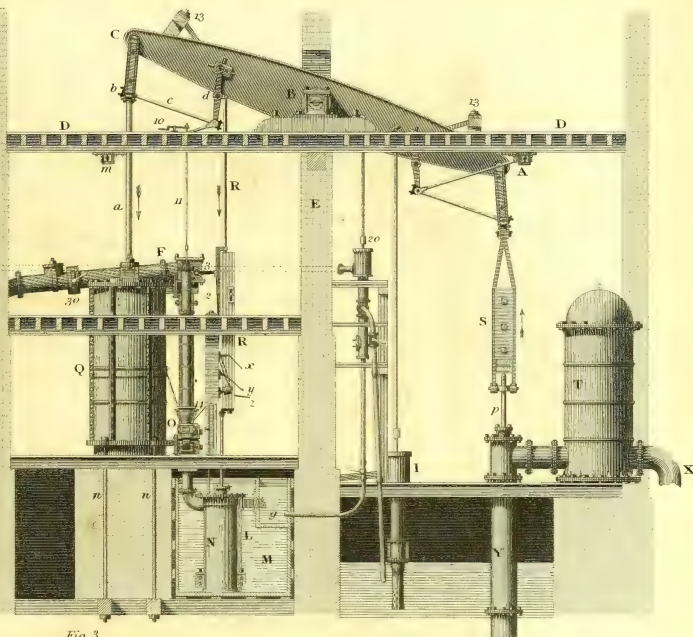


Fig. 2.

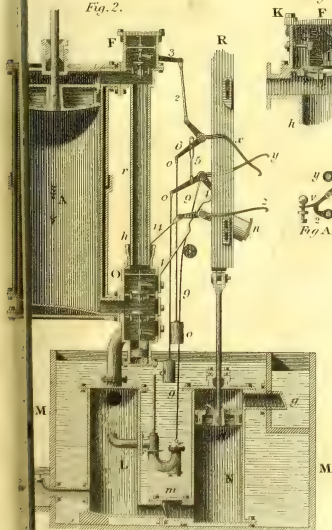


Fig. 3.

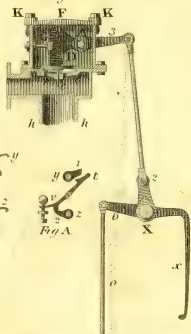


Fig. 4.

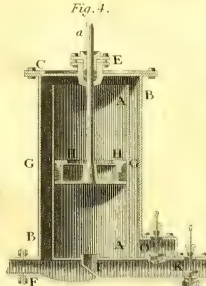


Fig. 5.

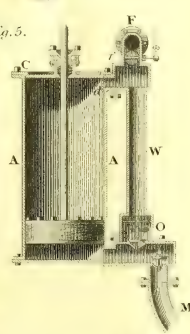


Fig. 6.

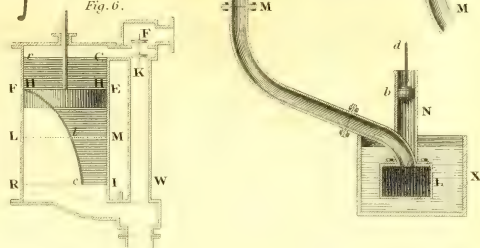






Fig. 5.

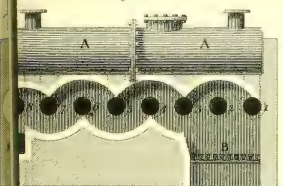


Fig. 4.

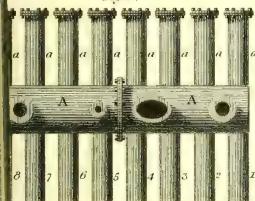
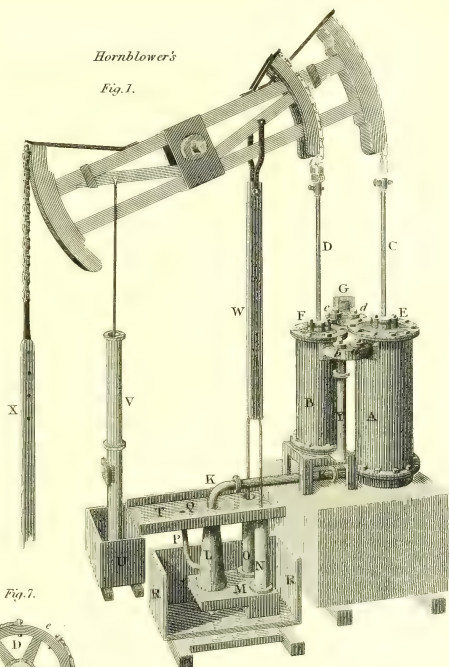


Fig. 2.



Hornblower's

Fig. 1.



Cartwright's

Fig. 8.

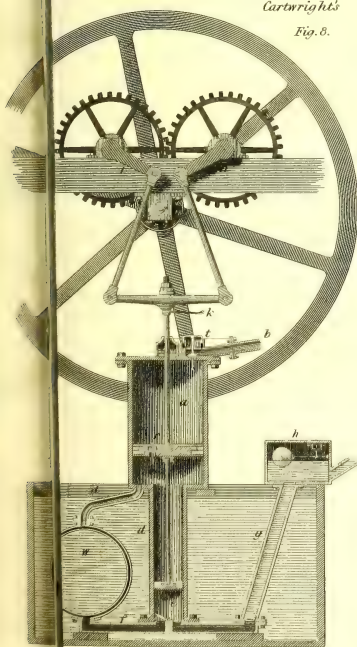


Fig. 7.

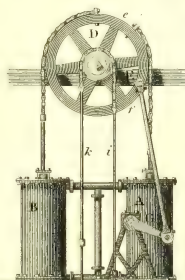
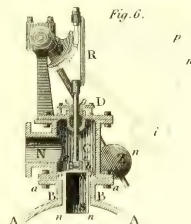
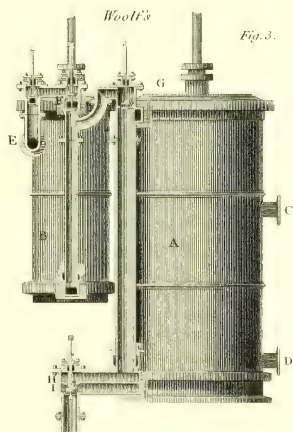


Fig. 6.

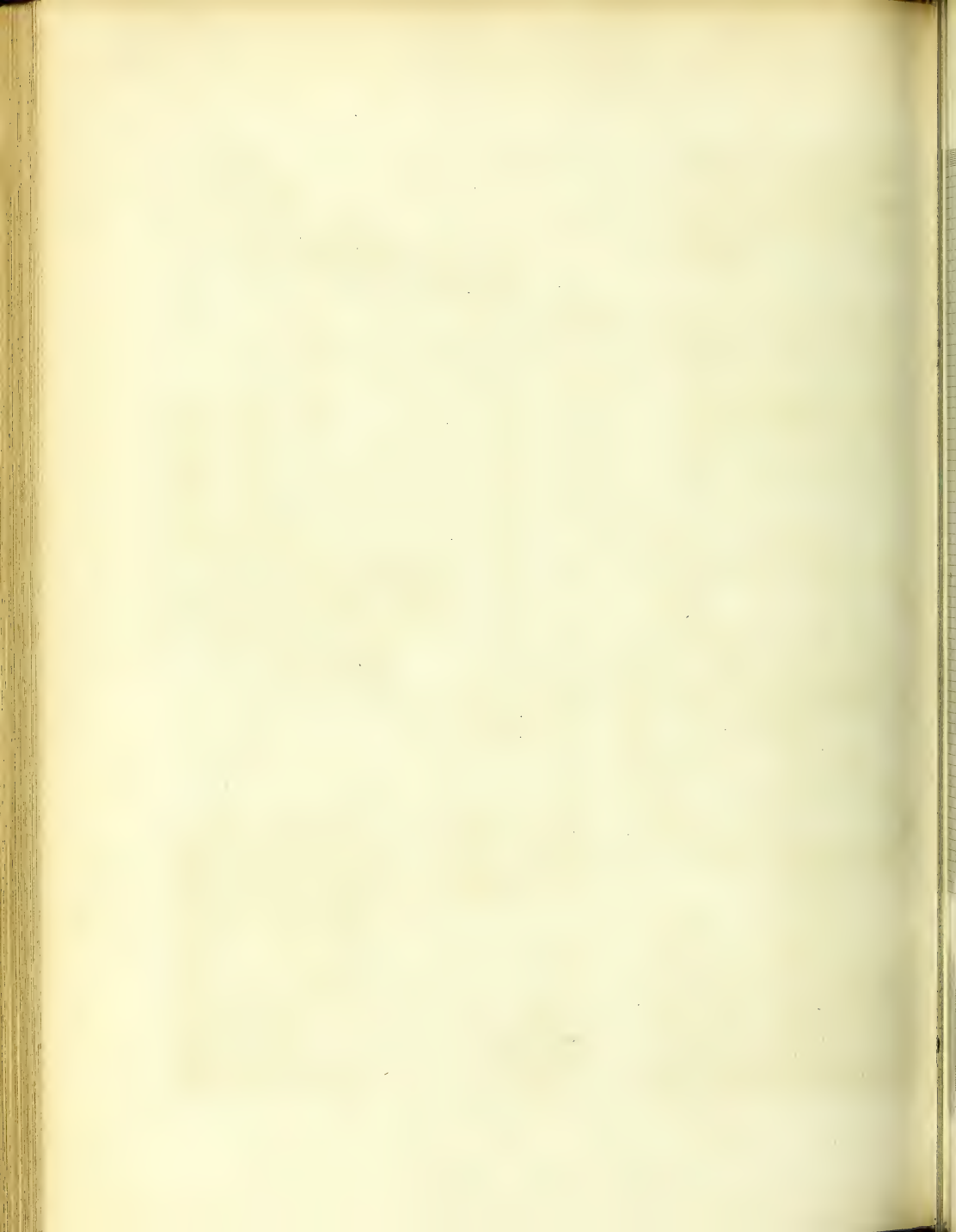


Woolf's

Fig. 3.

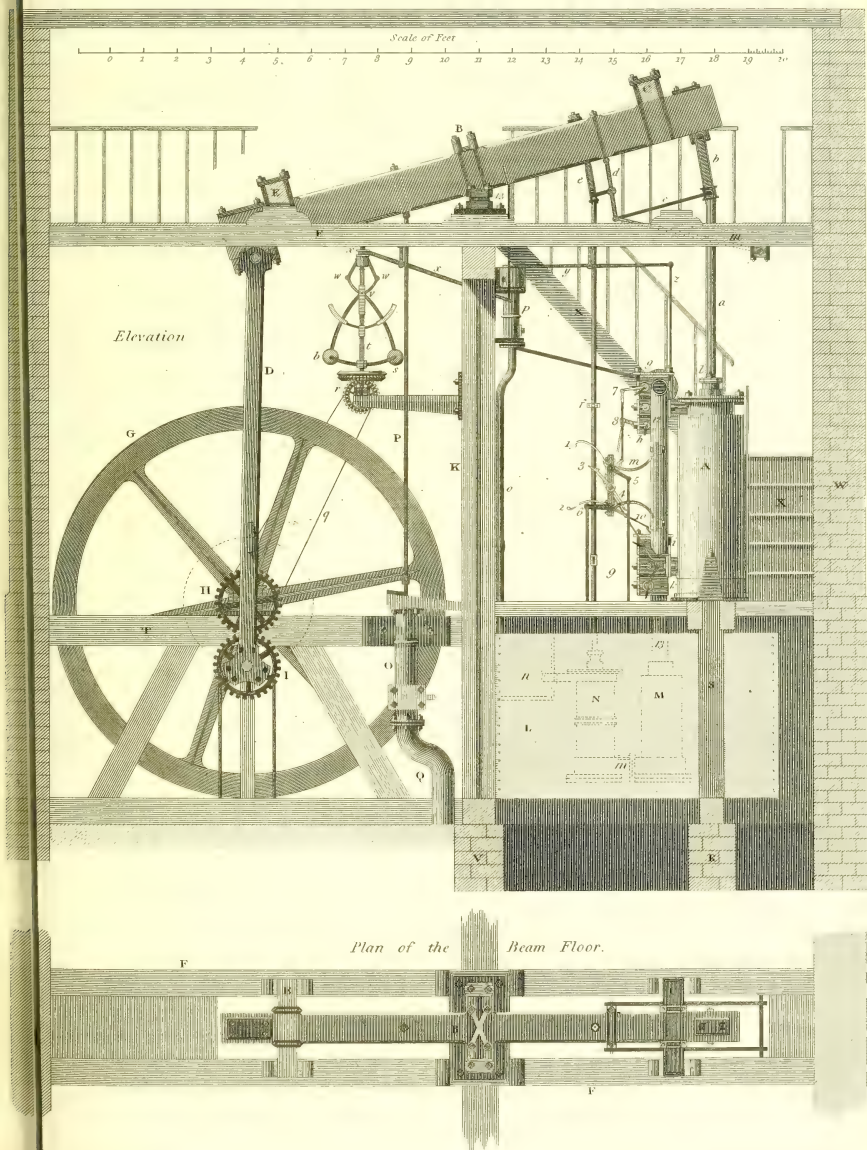






# STEAM ENGINE.

*Beulton and Watt's Engine on the original Construction.*





STEAM ENGINE,  
CYLINDERS, PISTONS &c.

PLATE VII.

Fig. 4.

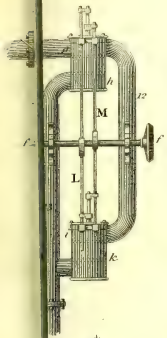


Fig. 5.

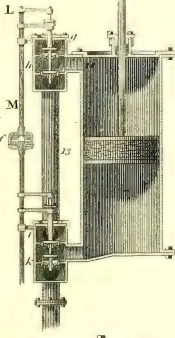


Fig. 2.

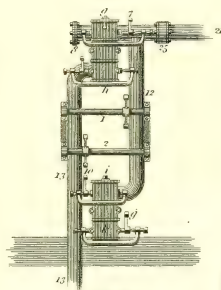


Fig. 1.

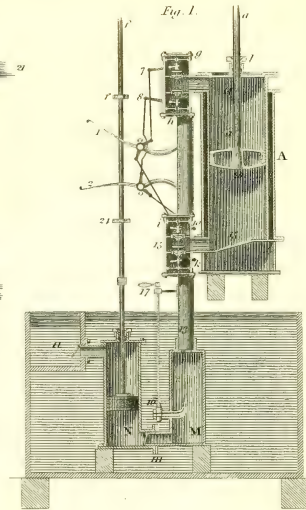


Fig. 16.

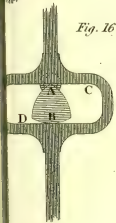


Fig. 15.

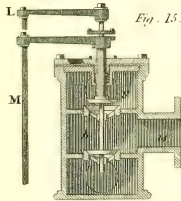


Fig. 3.

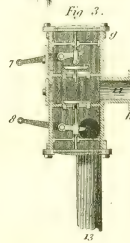


Fig. 9.

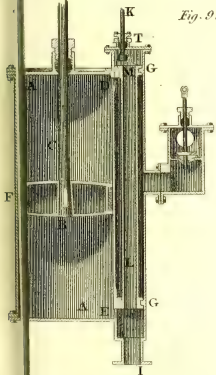


Fig. 8.

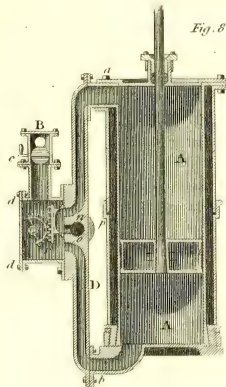


Fig. 7.  
above the piston  
Vacuum p  
Steam h  
beneath the piston

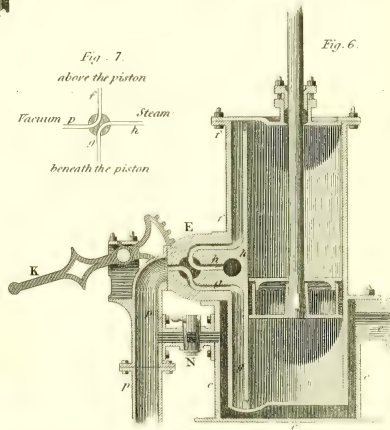


Fig. 6.

Fig. 10.

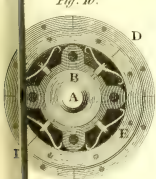


Fig. 11.

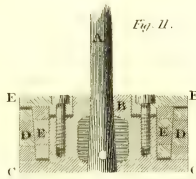


Fig. 12.

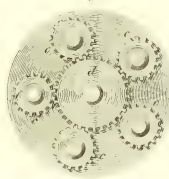
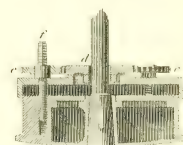


Fig. 13.

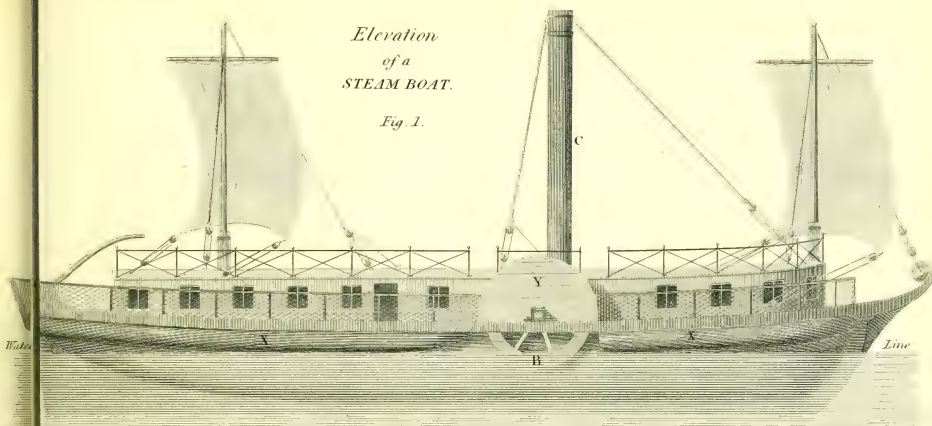




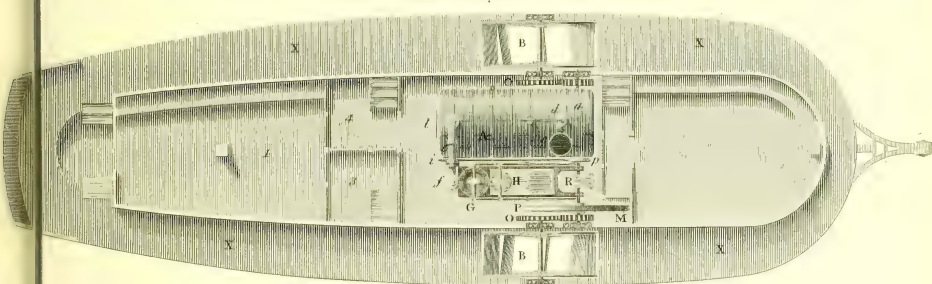


*Elevation  
of a  
STEAM BOAT.*

*Fig. 1.*

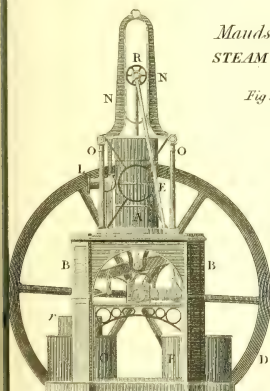


*Plan. Fig. 2.*

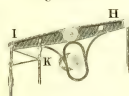


*Maudslay's  
STEAM ENGINE .*

*Fig. 3.*

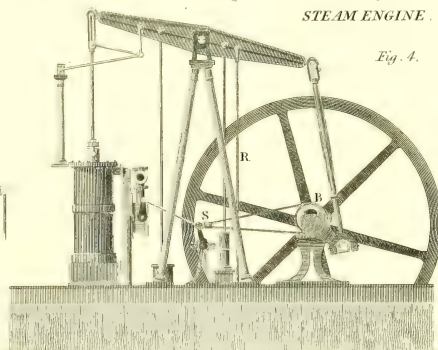


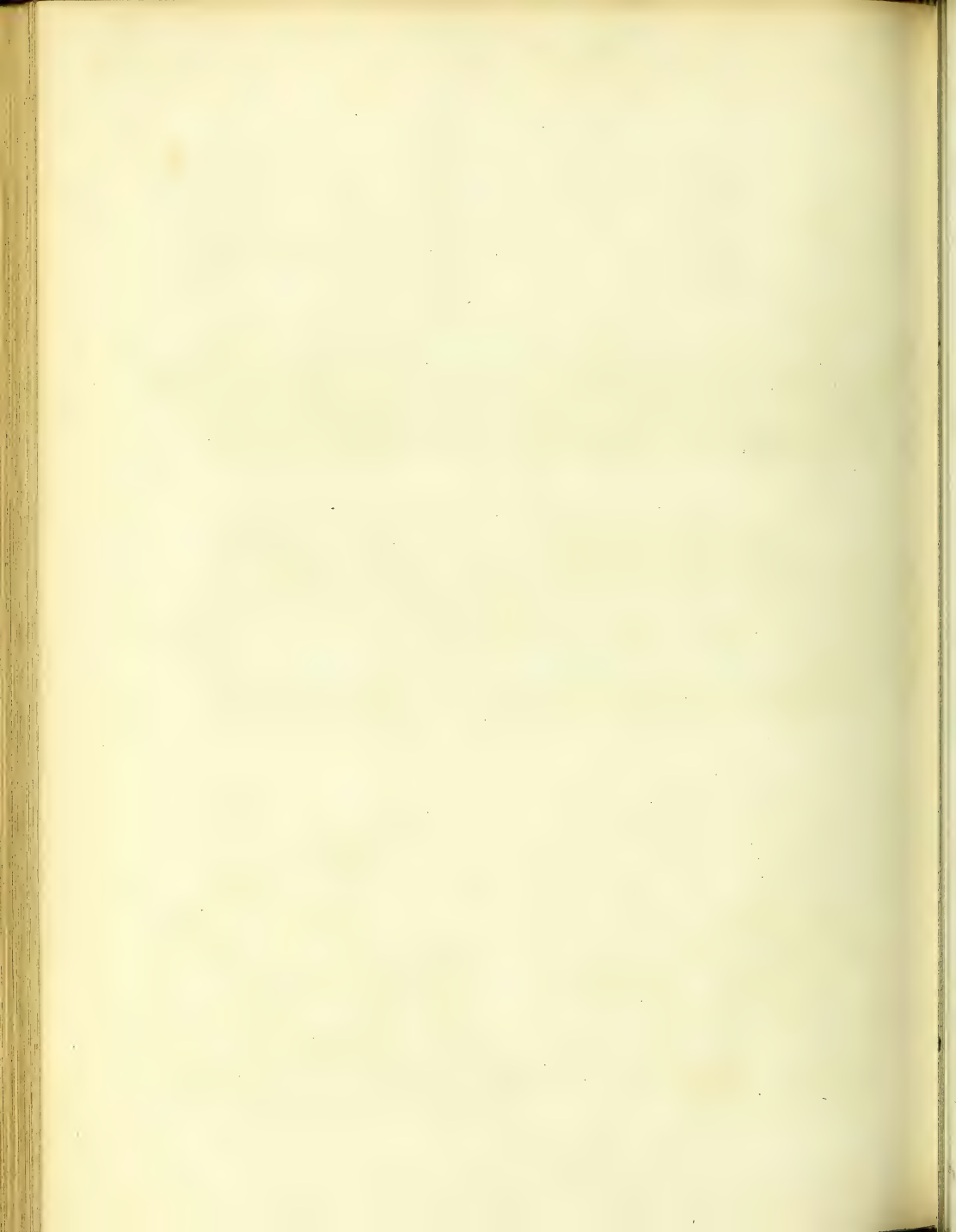
*Fig. 5.*



*Murray's  
STEAM ENGINE .*

*Fig. 4.*



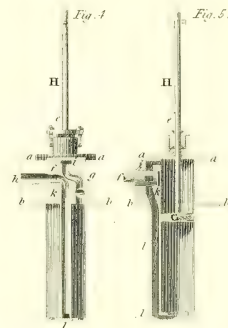
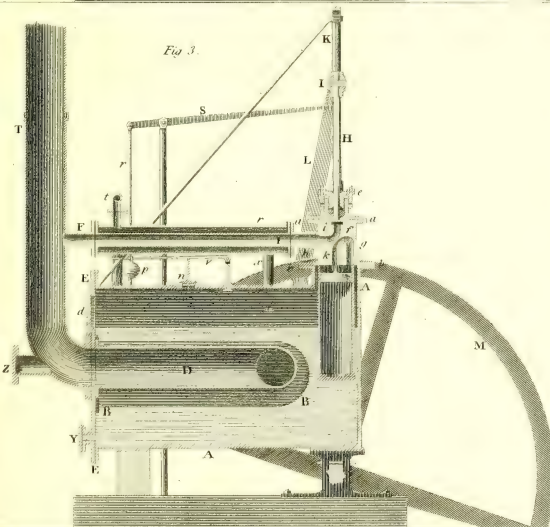
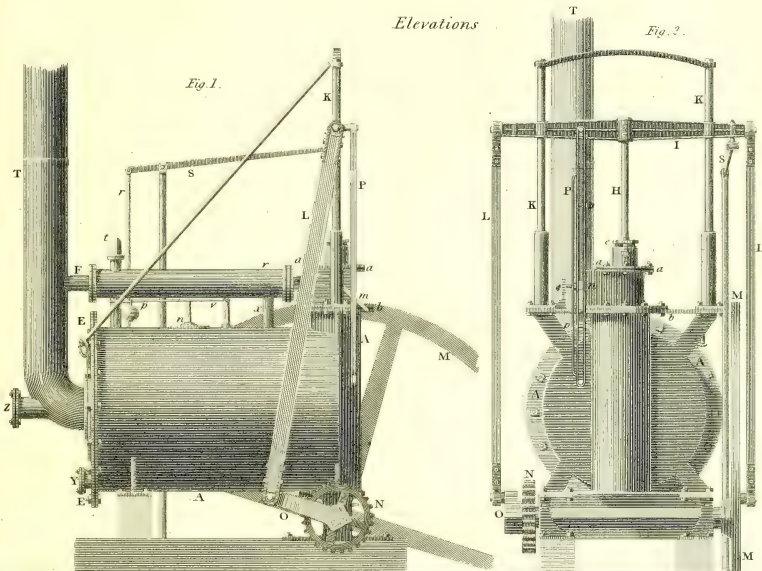


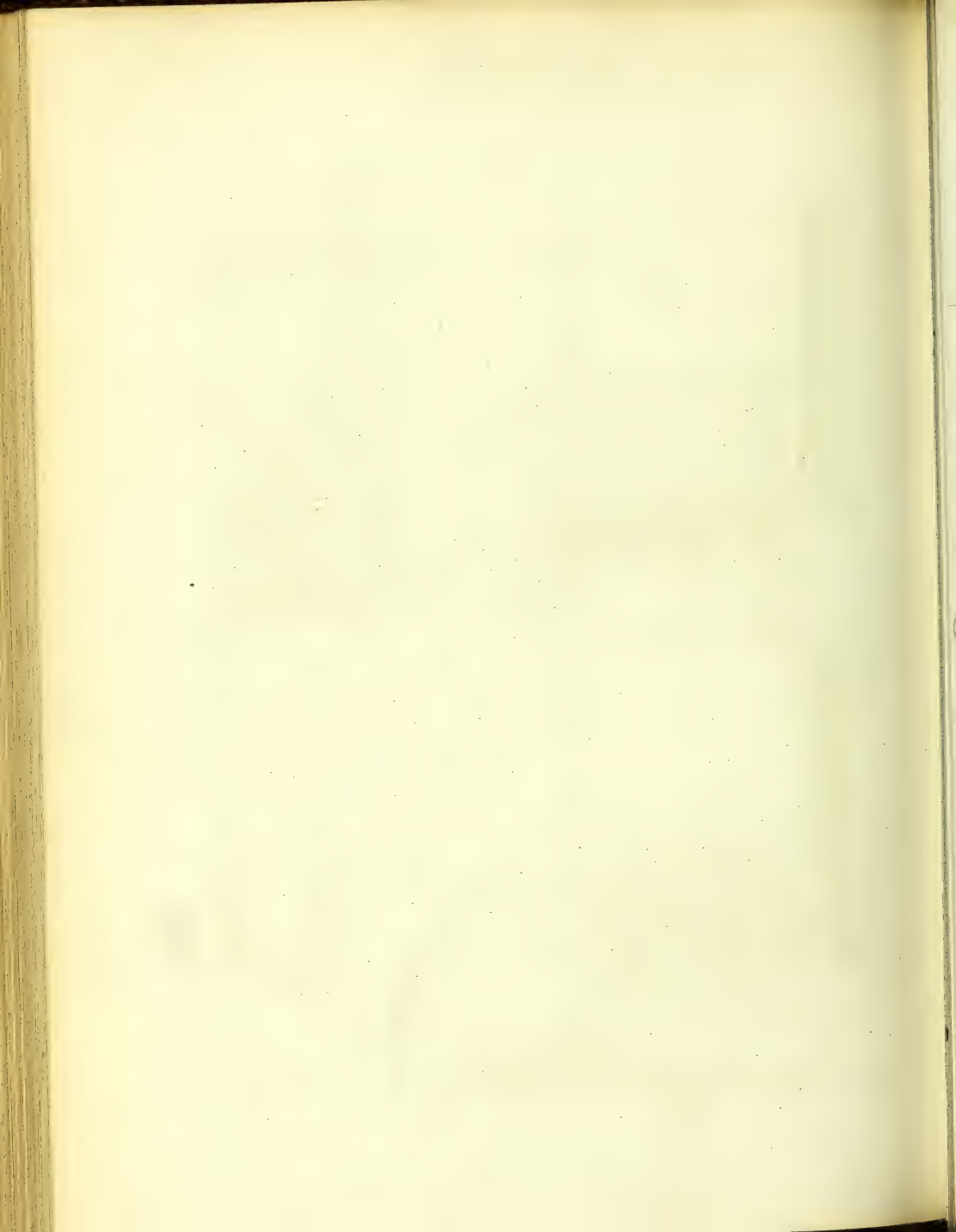
# STEAM ENGINE.

PLATE LX.

*High Pressure STEAMENGINE used with the Dredging Machine on the River Thames.*

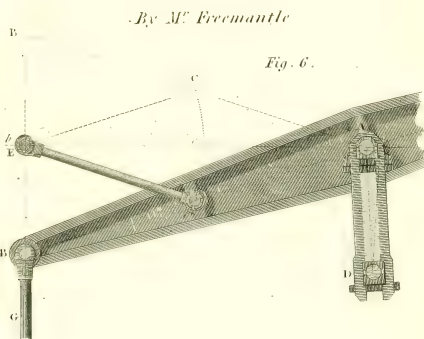
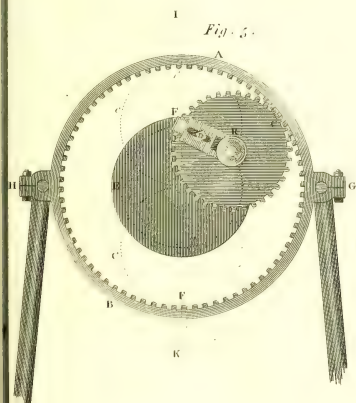
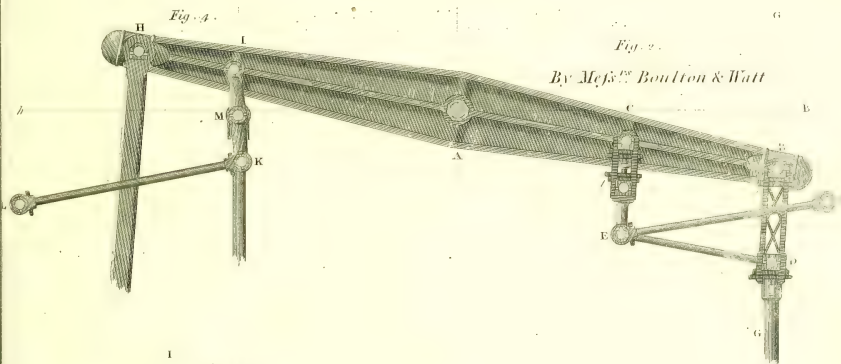
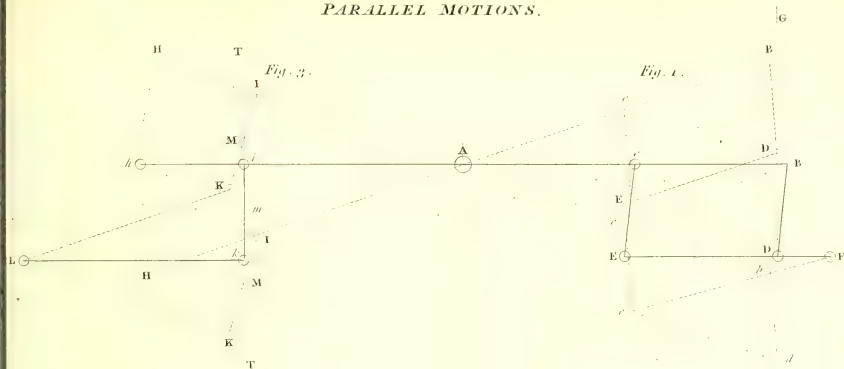
Elevations



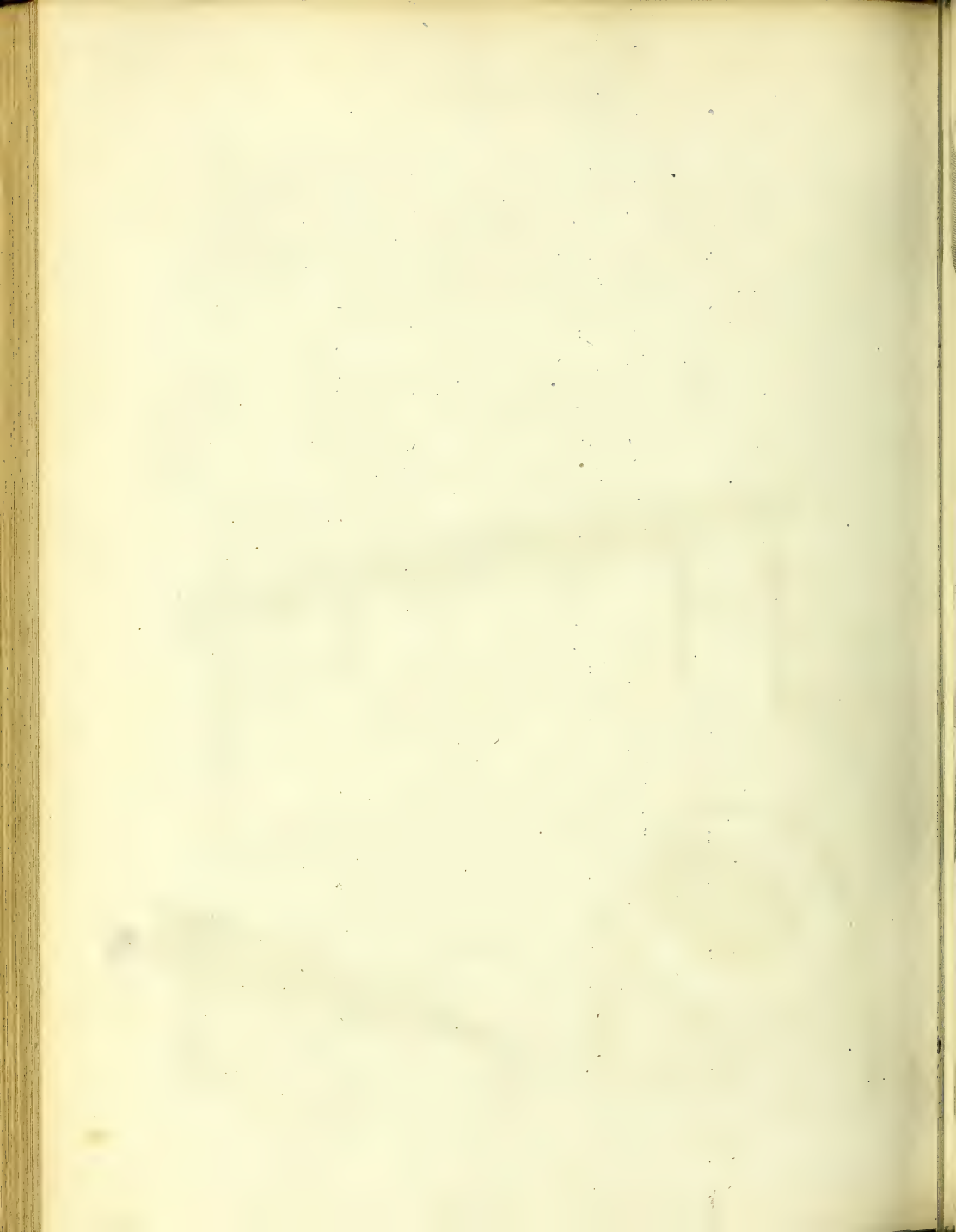


# STEAM ENGINE. PARALLEL MOTIONS.

PLATE III.







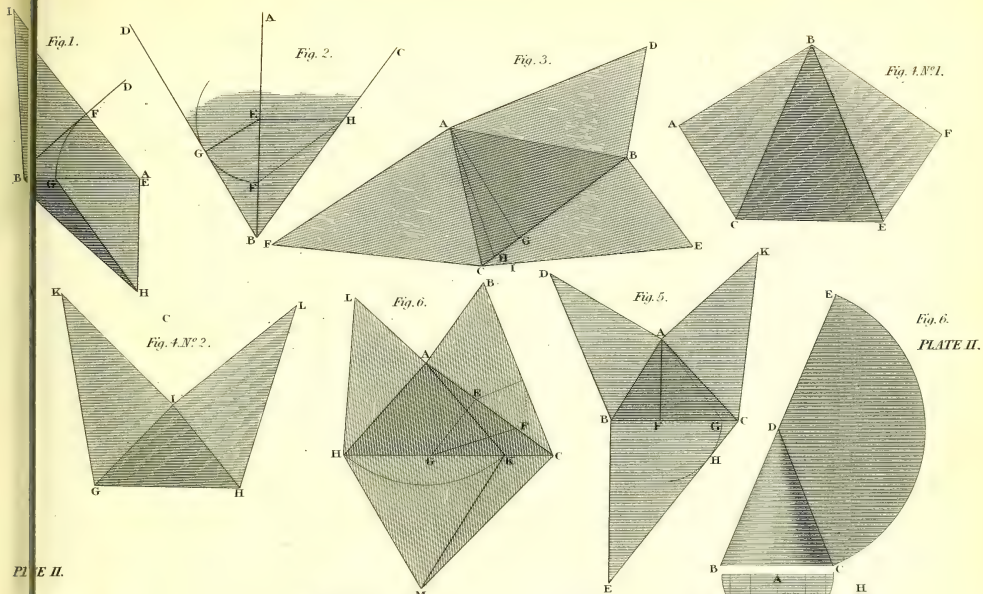
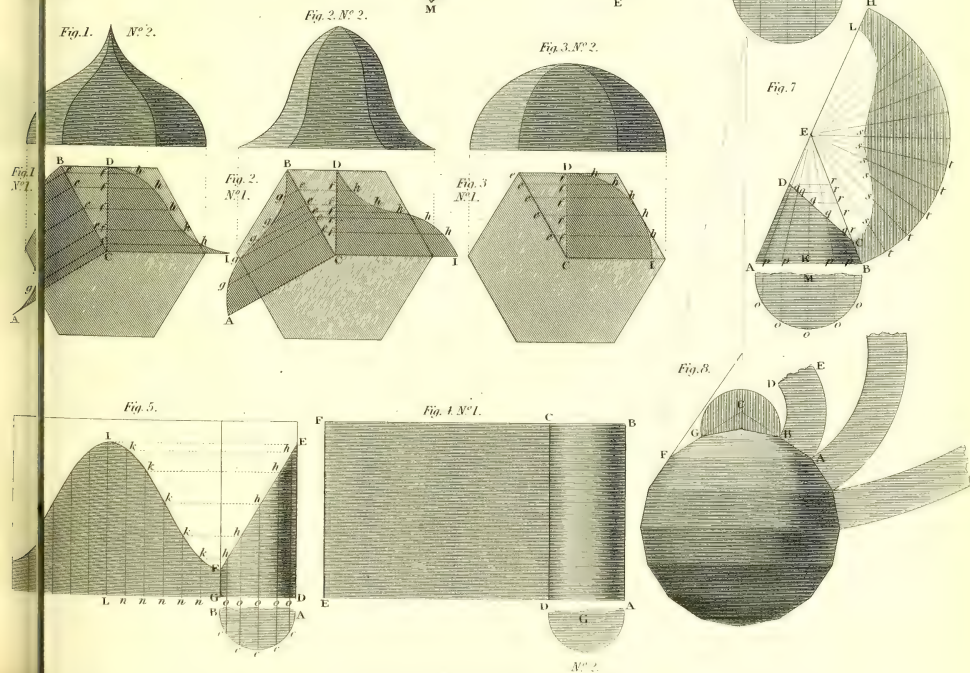
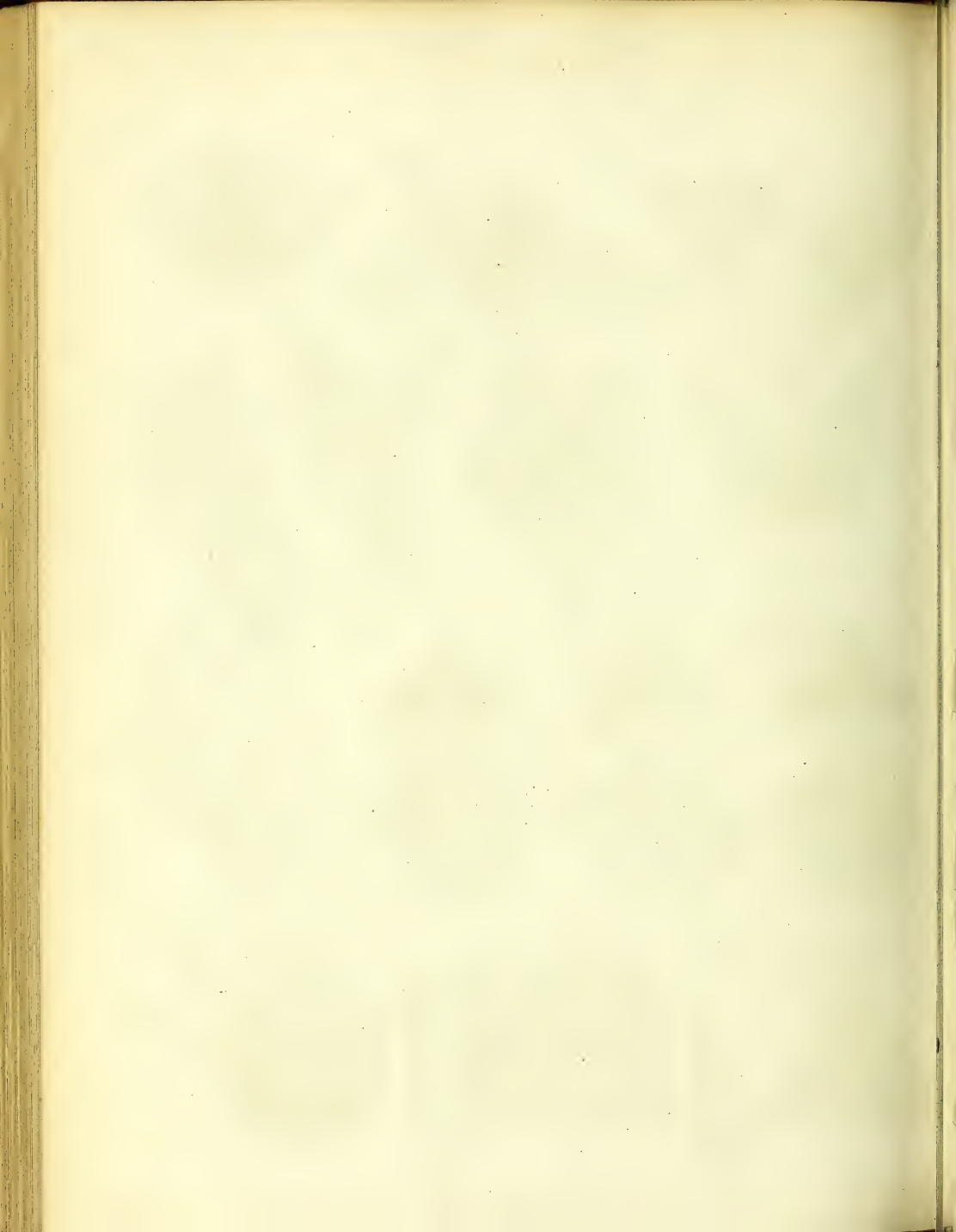
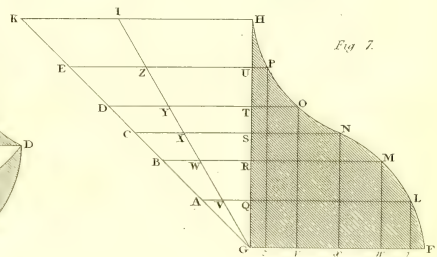
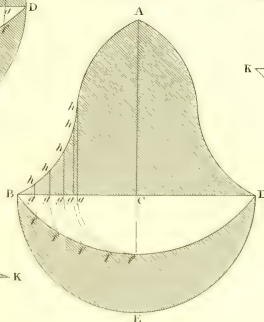
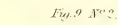
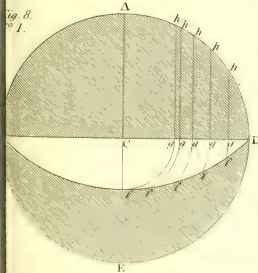
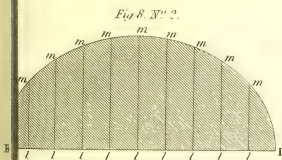
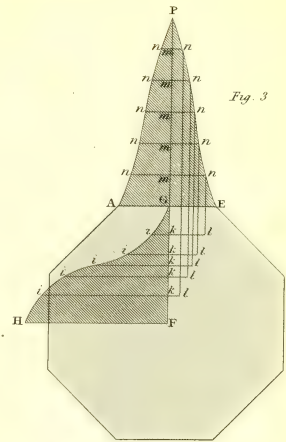
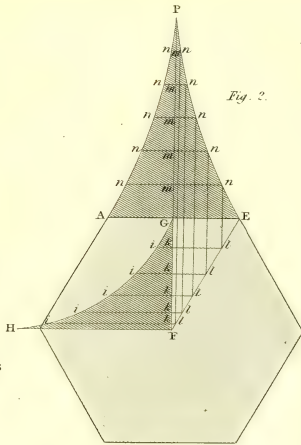
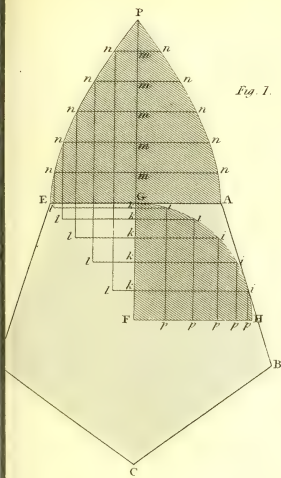


PLATE II.







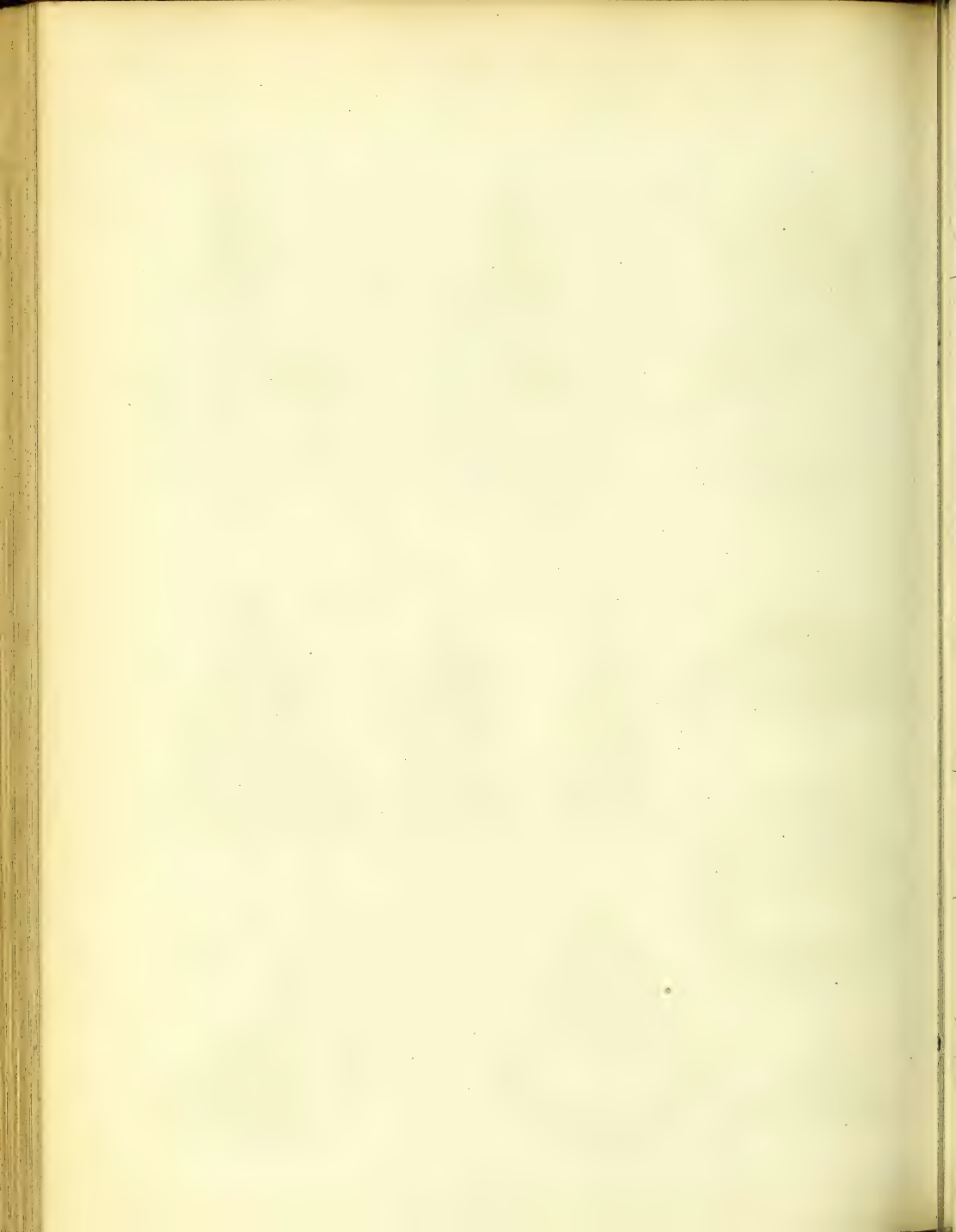




Fig. 1.

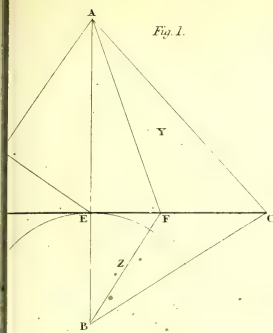


Fig. 2.

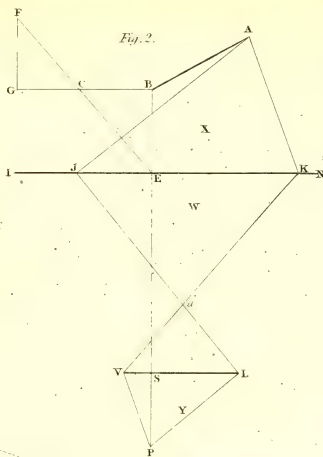


Fig. 3.

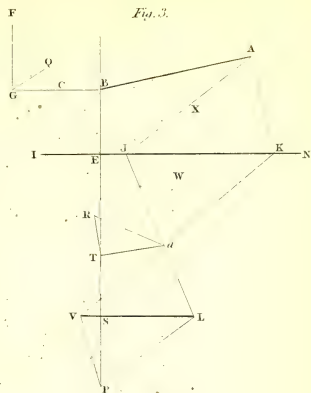


Fig. 4.

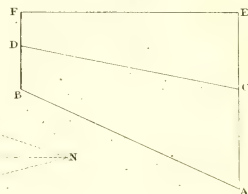


Fig. 5.

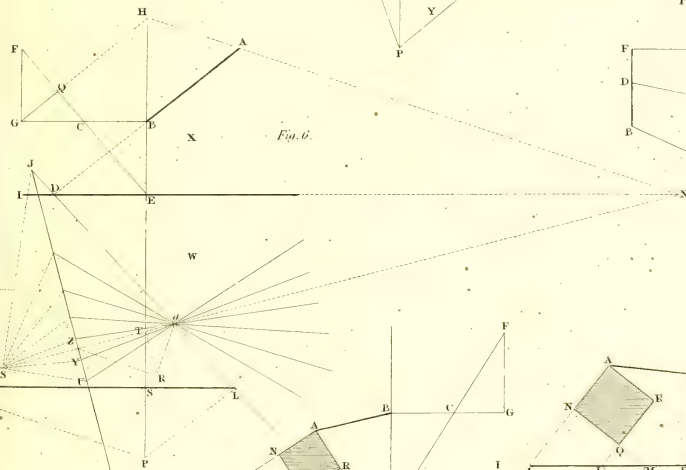


Fig. 6.

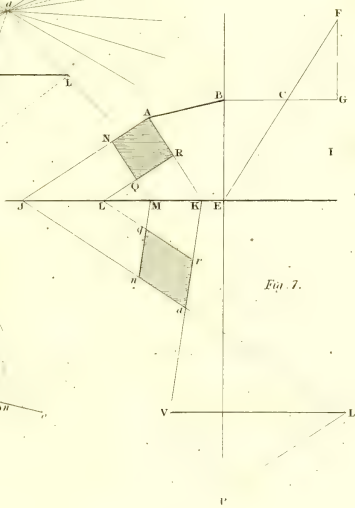


Fig. 7.

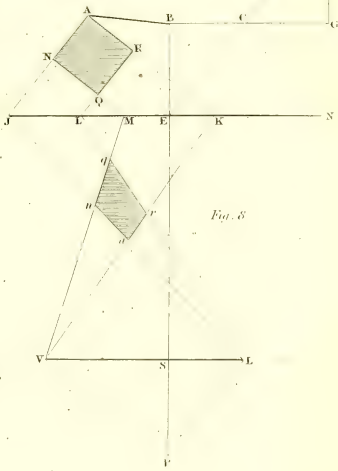
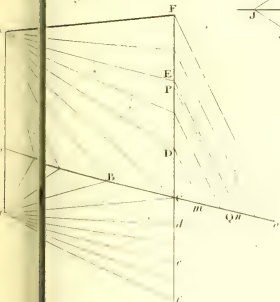
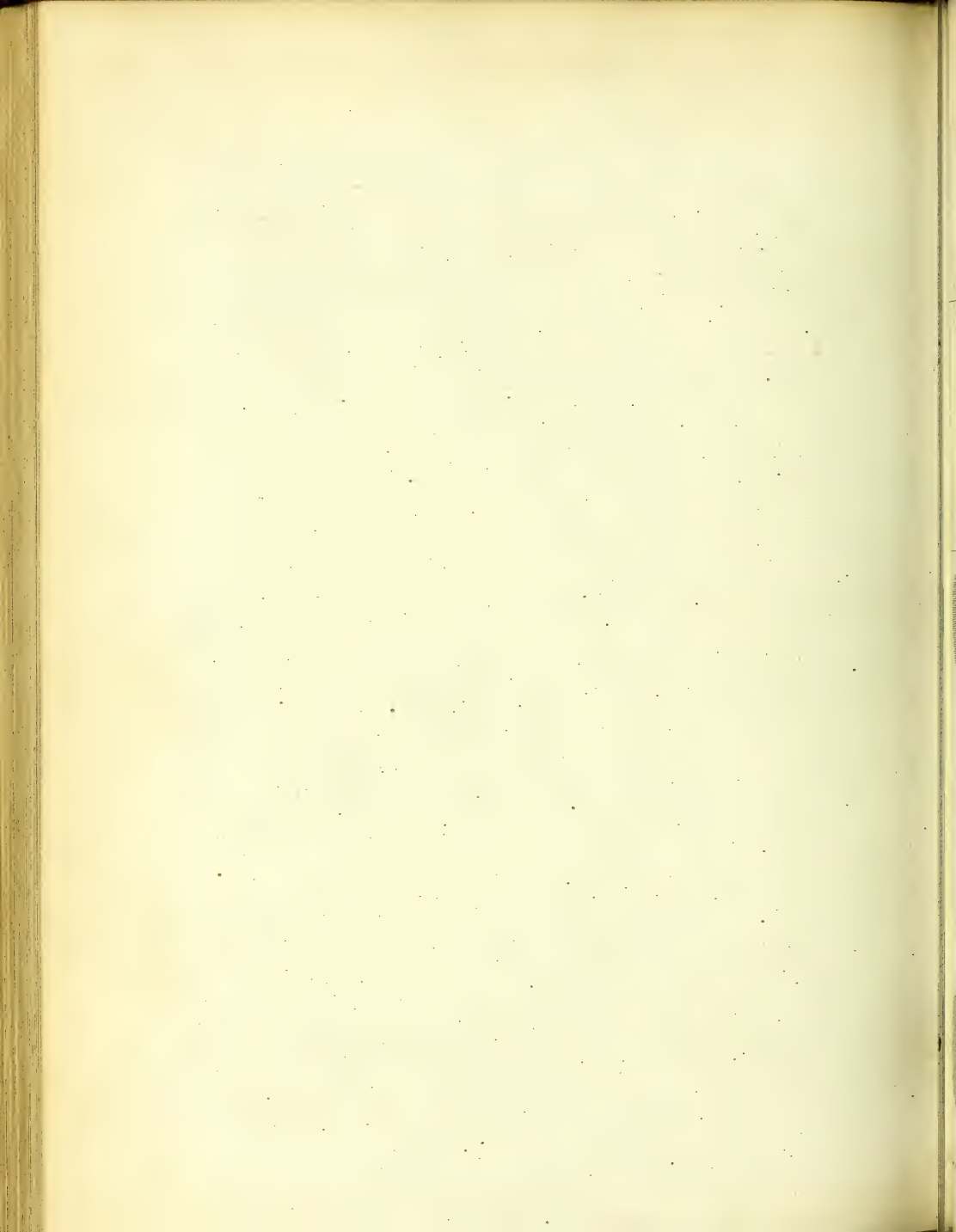
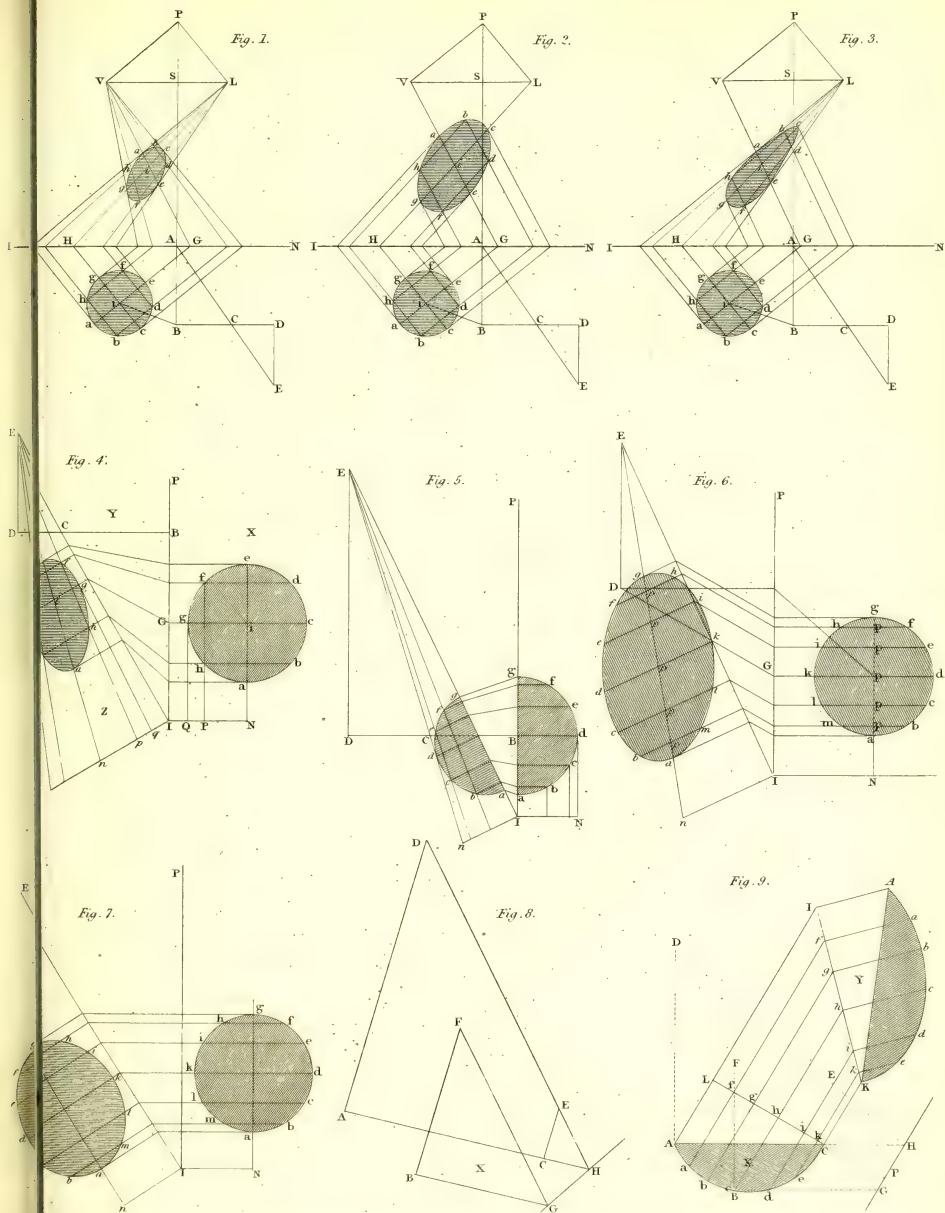
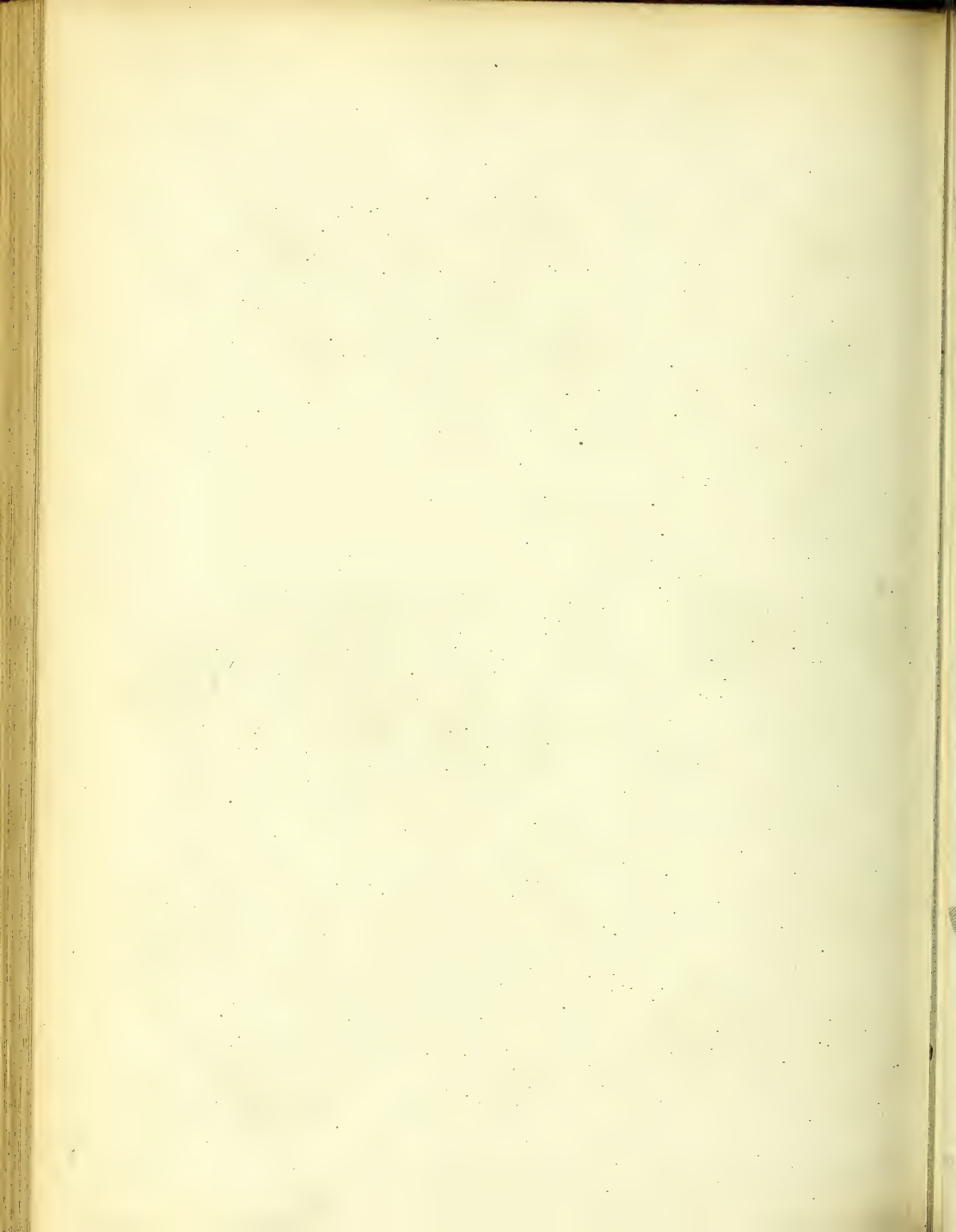


Fig. 8.









## STOCKING FRAME

*Fig 1.*

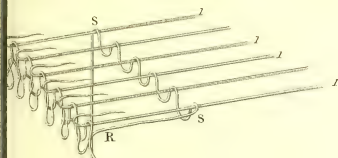


Fig 7.

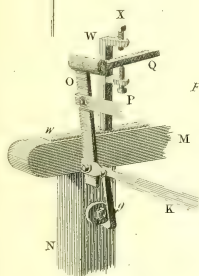
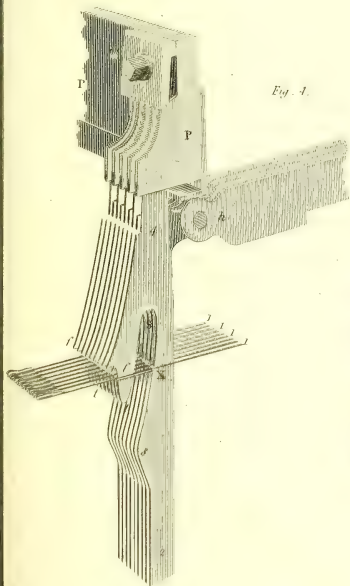


Fig. 4.



*Fig. 3.*

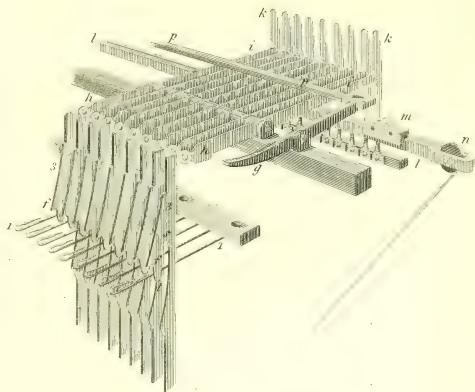
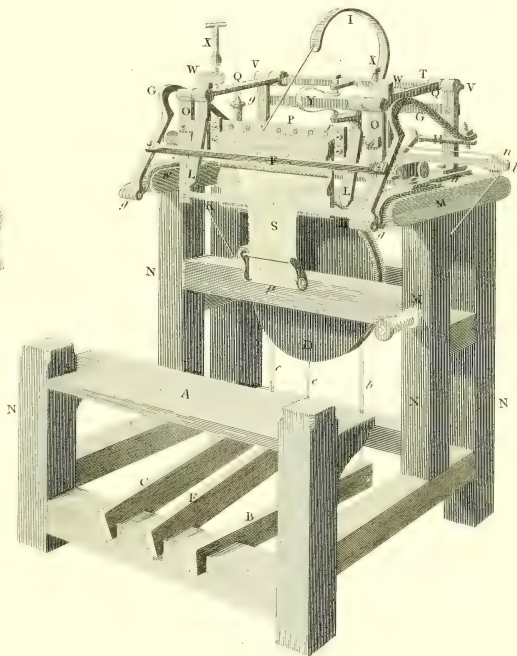
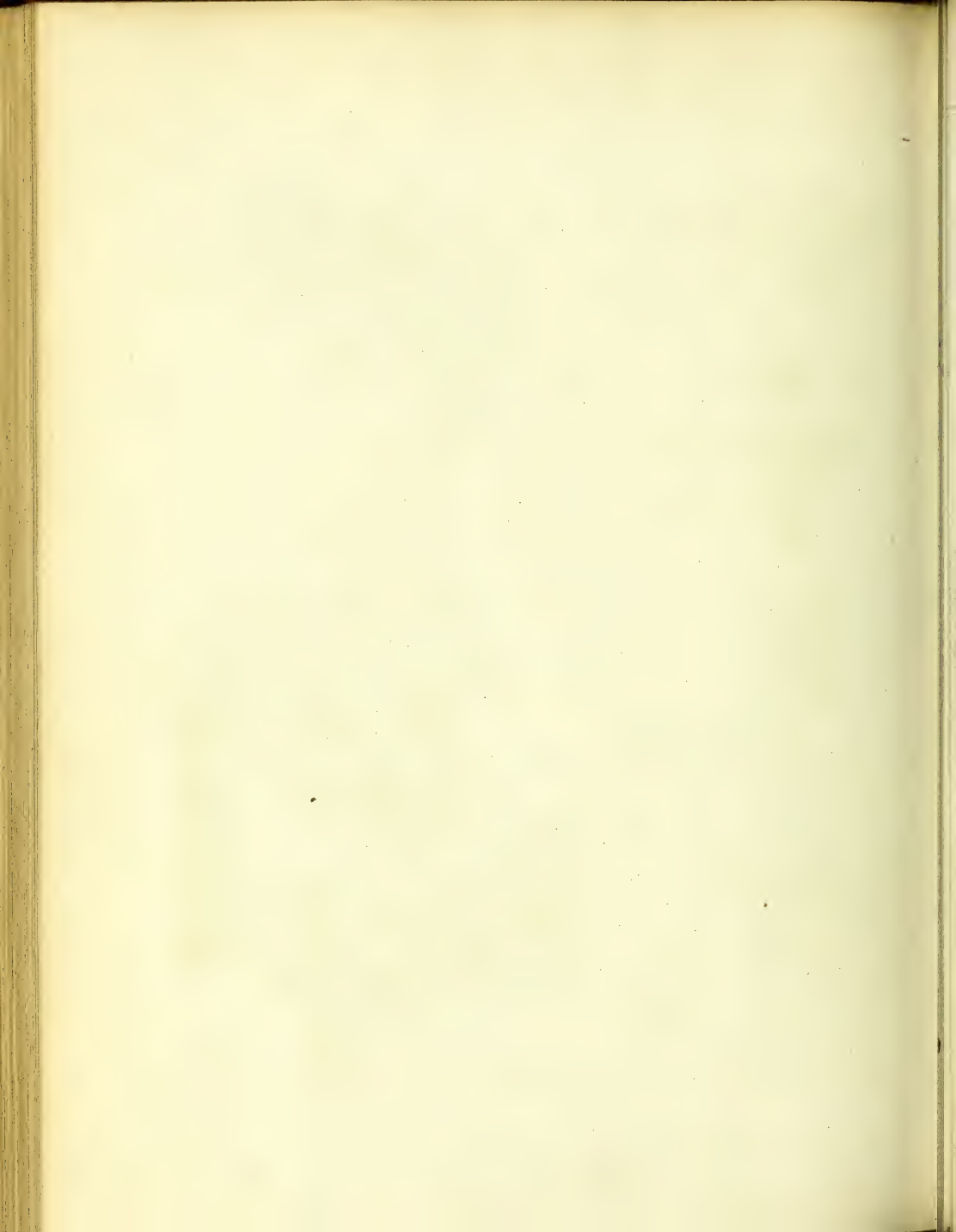
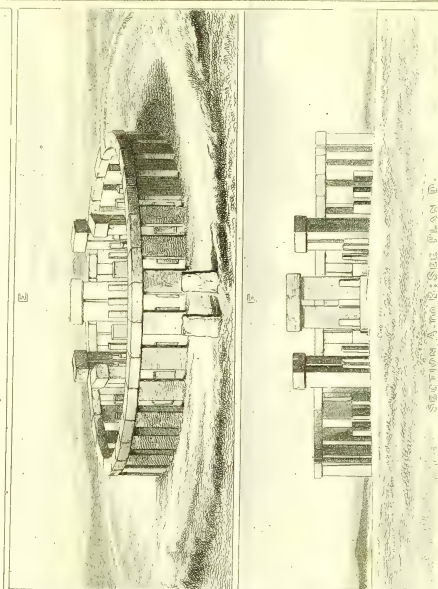
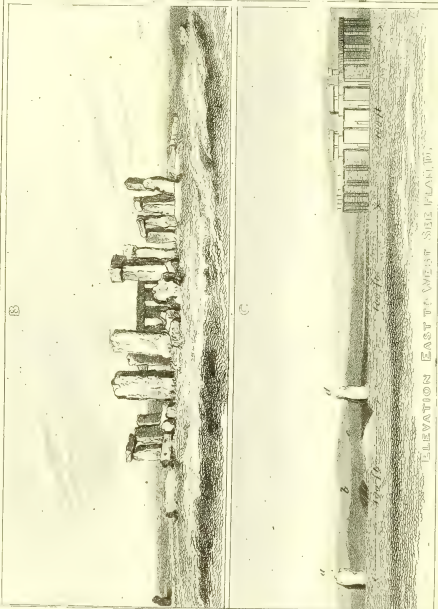
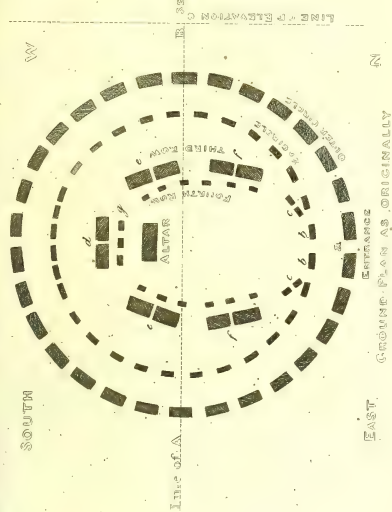


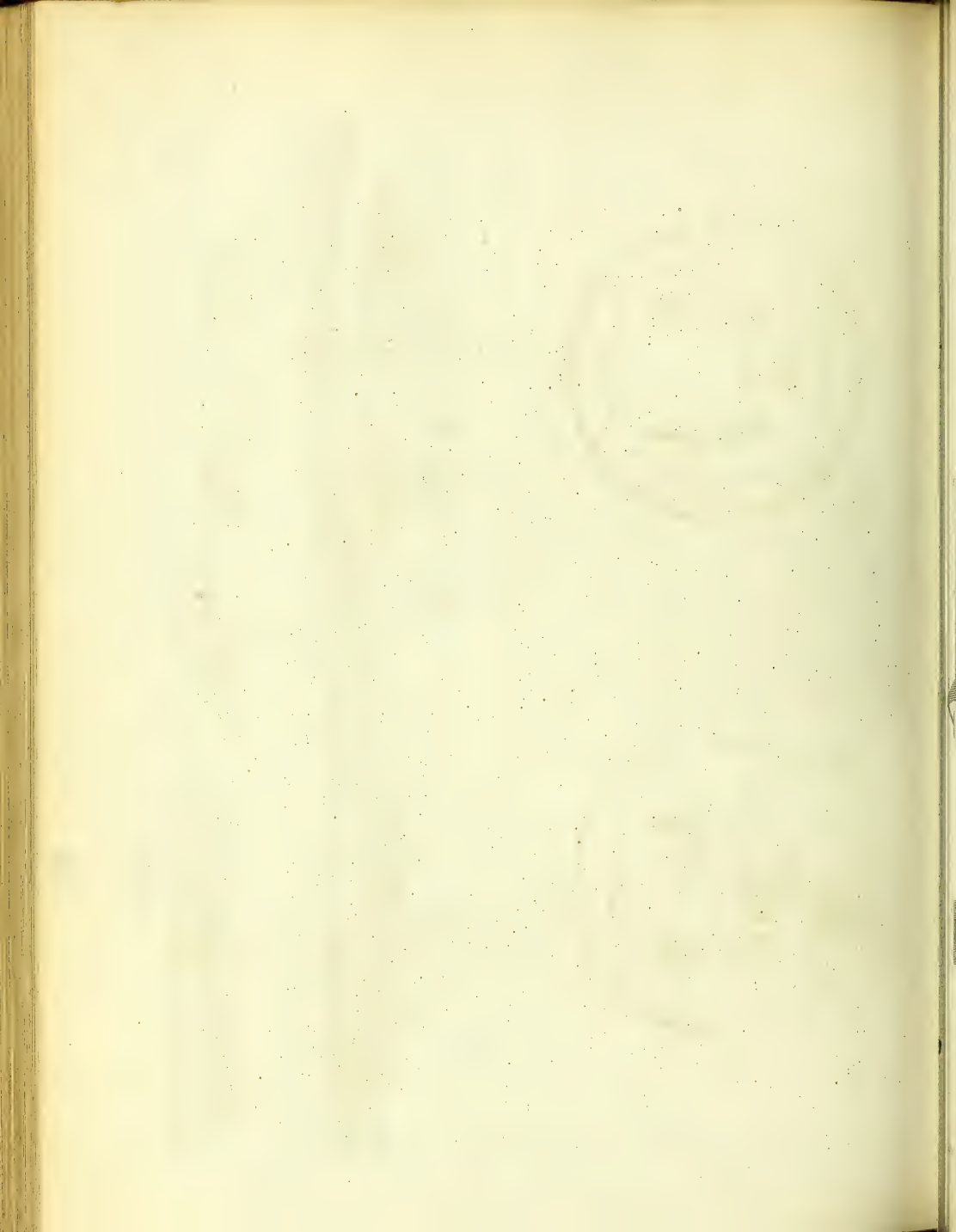
Fig. 2.





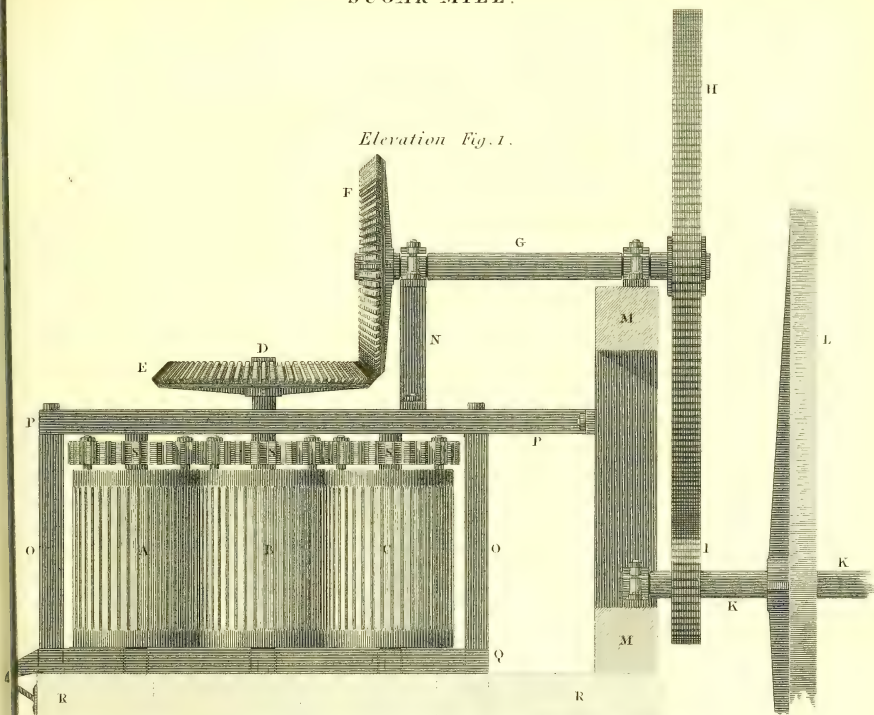




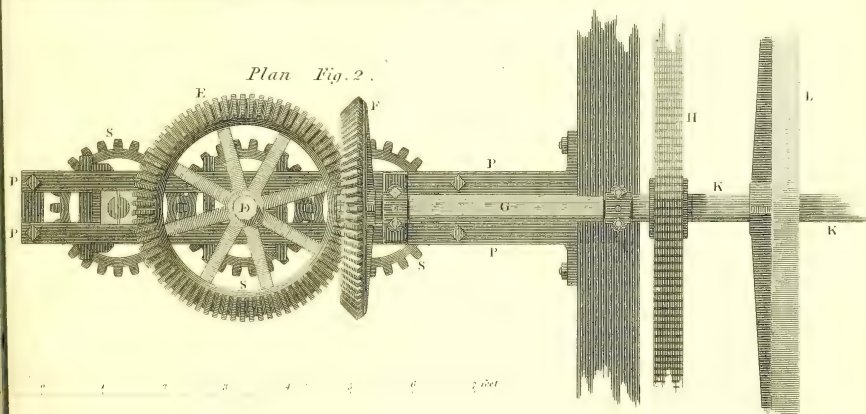


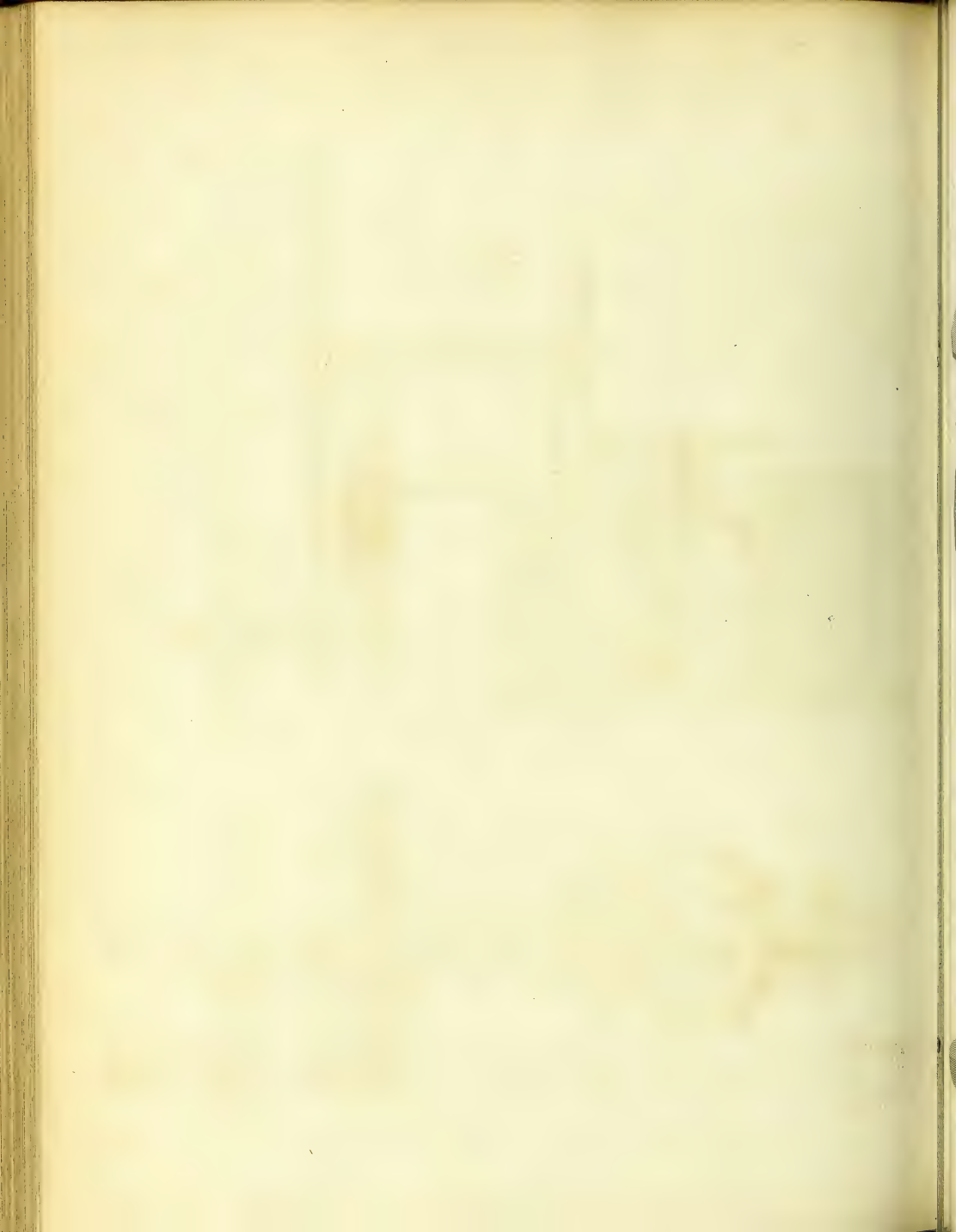
# SUGAR MILL.

*Elevation Fig. 1.*



*Plan Fig. 2.*







TOURNIQUETS AND AMPUTATING INSTRUMENTS.

Fig. 3.

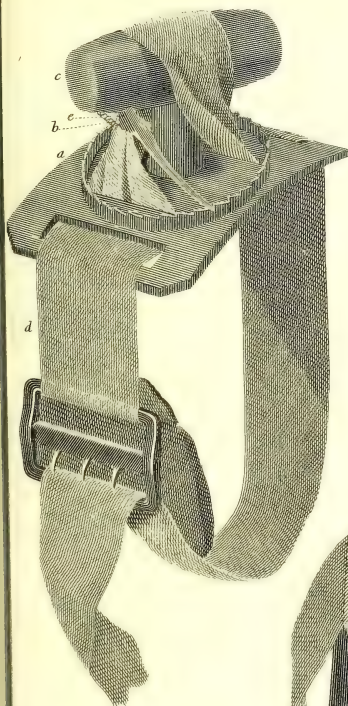


Fig. 1.

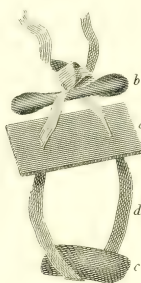


Fig. 2.

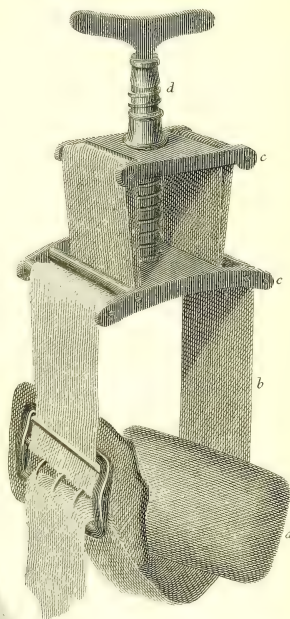


Fig. 4.

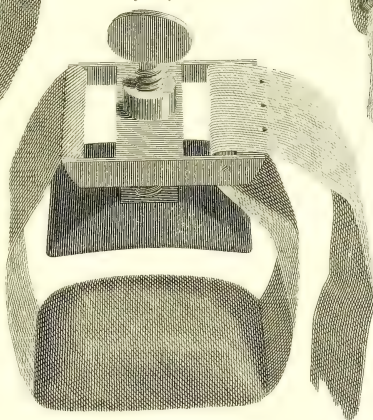


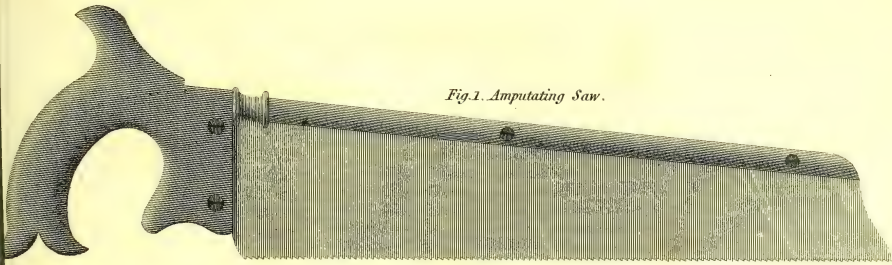
Fig. 5.



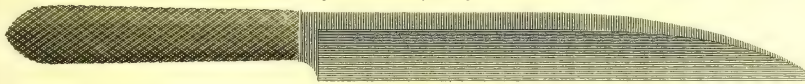
Fig. 6.



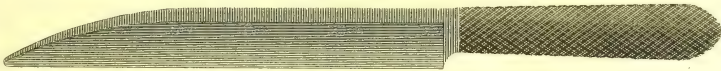




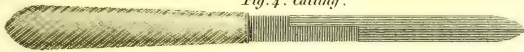
*Fig. 1. Amputating Saw.*



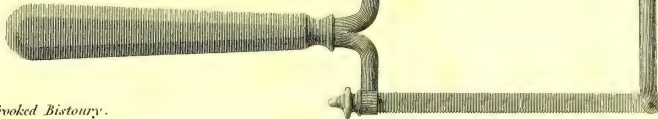
*Fig. 2. Large Amputating Knife.*



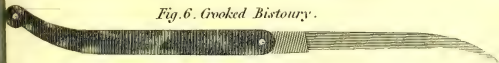
*Fig. 3. One of smaller size.*



*Fig. 4. Catling.*



*Fig. 5. Metacarpal Saw.*



*Fig. 6. Crooked Bistoury.*



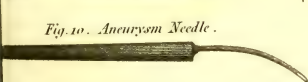
*Fig. 7. Probe pointed crooked Bistoury.*



*Fig. 8. Straight double edged Scalpel.*



*Fig. 9. Tenaculum.*

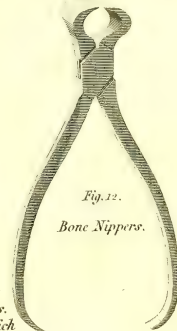


*Fig. 10. Aneurysm Needle.*



*Fig. 11.*

*Forceps for taking up the mouths of vessels.  
Employed also in several operations, in which  
careful dissection is requisite.*



*Fig. 12.*

*Bone Nippers.*

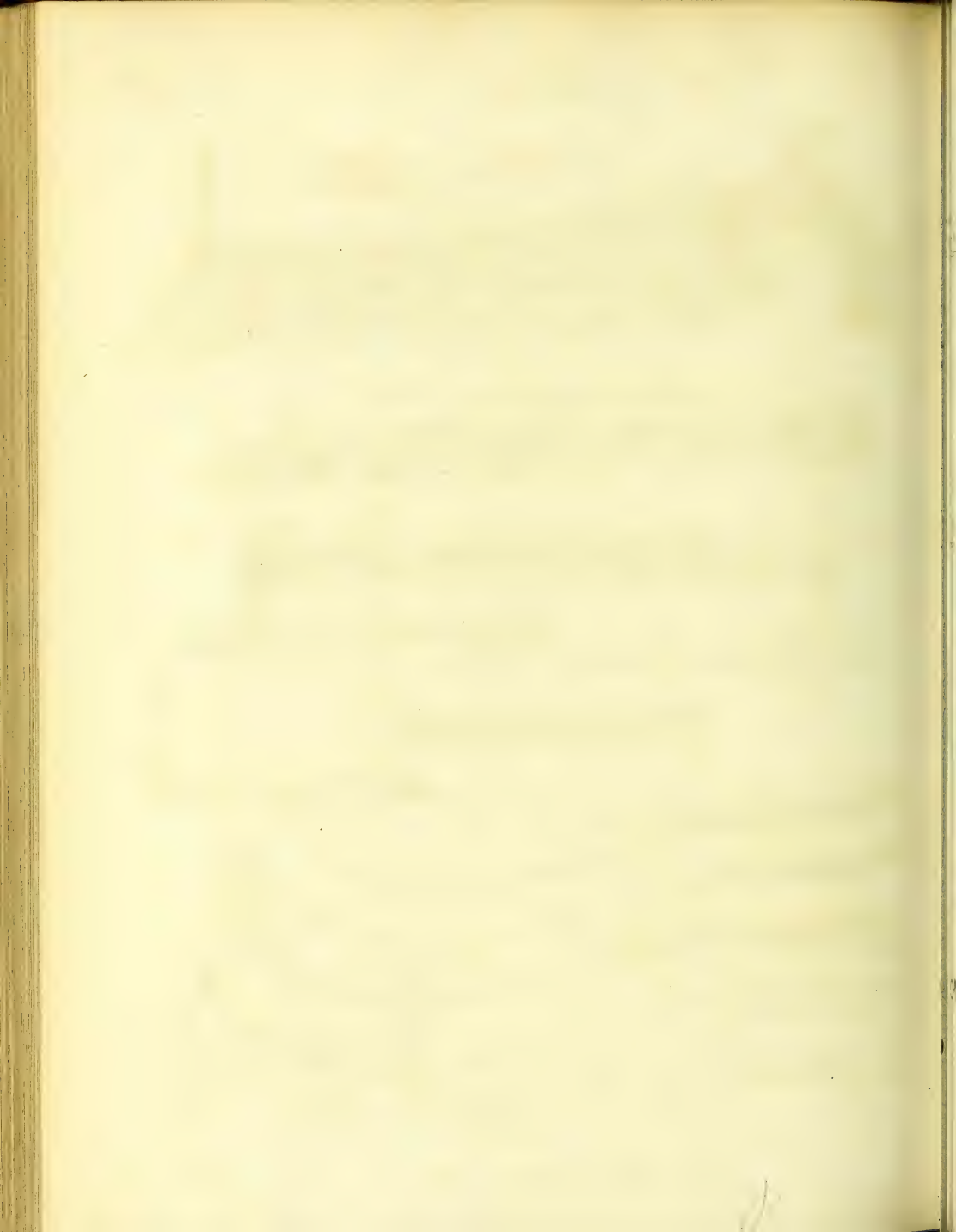




Fig. 1.

Fig. 2.

Fig. 3.

Fig. 4. Spatula.

Fig. 5.

Lancet.

Fig. 6. Eye Probe.

Fig. 7. Gastric Case.

Fig. 9. Common Probe.

Fig. 10. Director.

Fig. 12. Pocket Tomaculum.

Fig. 13.

Fig. 14.

Fig. 16.

Fig. 17.

Fig. 18.

Fig. 19.

Male Catheters.

Female Catheters.

Needle for  
sewing Wounds.

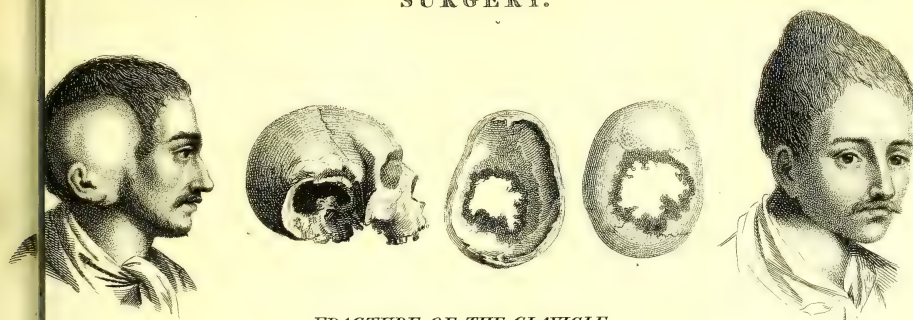
Fig. 8.  
Con. or Forceps.

Fig. 11.  
Scissors.

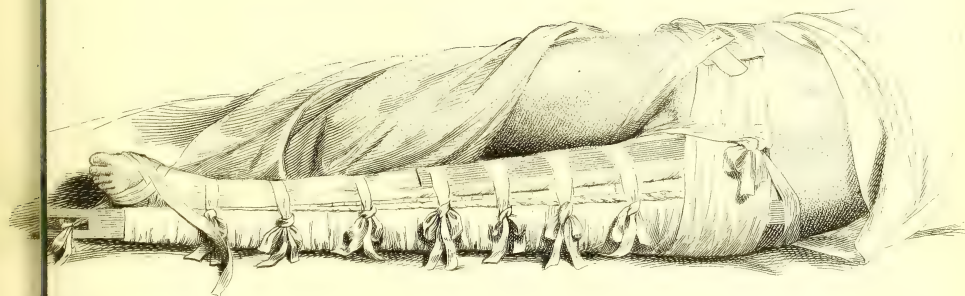
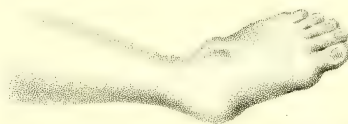
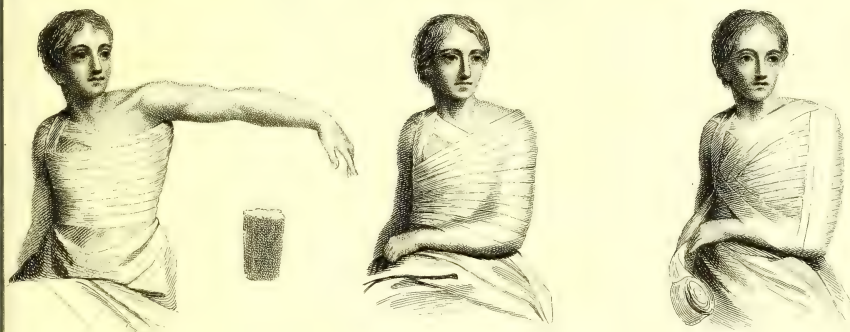




SURGERY.



FRACTURE OF THE CLAVICLE.

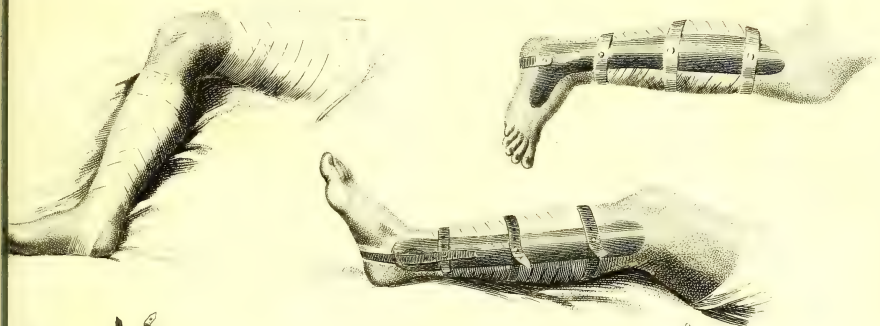




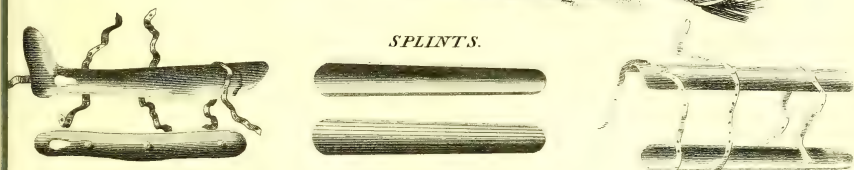
# SURGERY.

PLATE V.

## FRACTURE OF THE LEG.



SPLINTS.



BANDAGES.







# SURGERY.

PLATE VI.

## Instruments for Lithotomy.

Fig. 1.

*Mr Earle's Stone Breaker.*

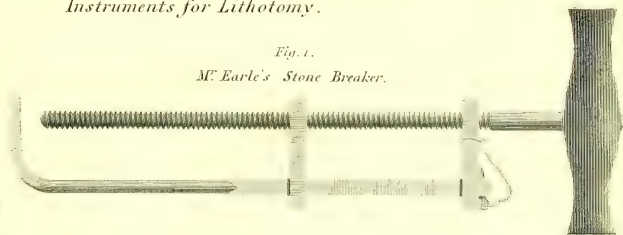


Fig. 3.

*Mr Chas. Bell's Staff*  
*with the groove on the side.*



Fig. 2.

*Scoop*



Fig. 4.

*Mr A. Burn's knife and Staff.*

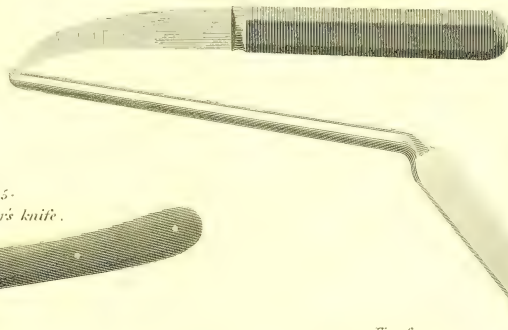


Fig. 5.

*Mr Hunter's knife.*

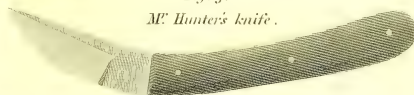


Fig. 6.

*Mr A. Cooper's knife.*



Fig. 7.

*Mr Tho<sup>s</sup> Blizard's knife.*



Fig. 9.

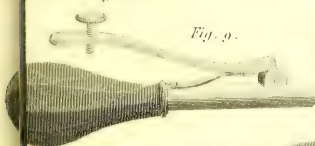


Fig. 8.

*Frere Gasmie's Bistouri Caché.*





# SURGERY.

*Instruments for Lithotomy.*

*Fig. 1.*

*Sound*

*Fig. 2.*

*Staffs*

*Fig. 3.*

*Fig. 4.*

*Fig. 5.*

*Blunt Gorget. Fig. 6.*

*Forceps.*

*Hawkin's cutting Gorget. Fig. 7.*

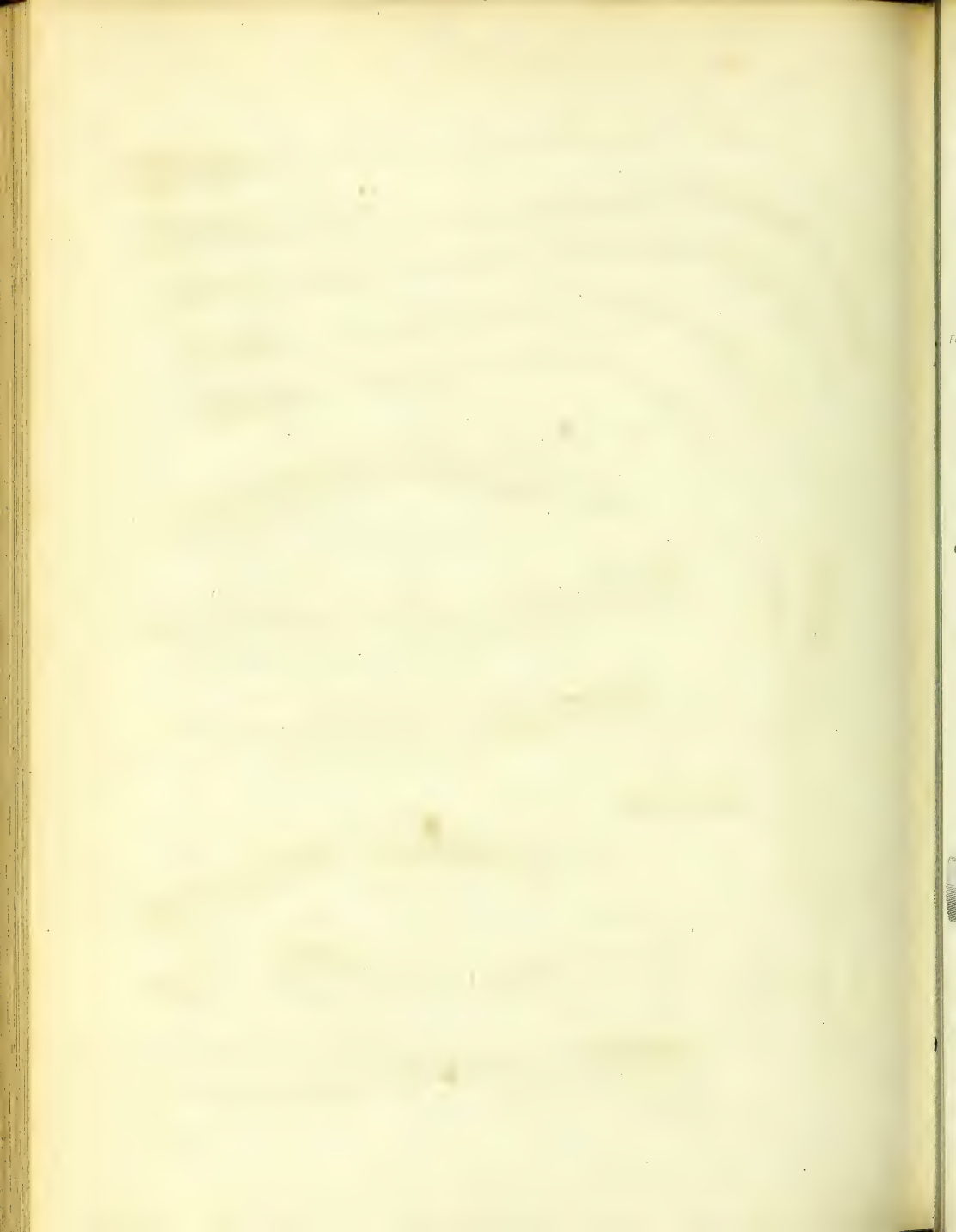
*Mr. Cline's cutting Gorget. Fig. 8.*

*Mr. Abernethy's Gorget. Fig. 9.*

*Forceps. Fig. 10.*

*Fig. 11.*

*Fig. 12.*



TRIPOD ELEVATOR.

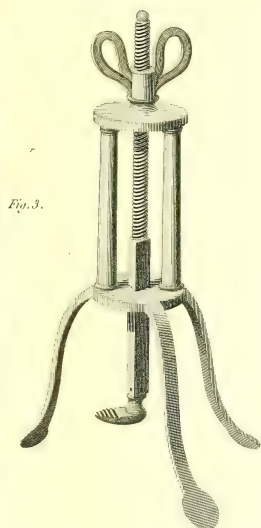
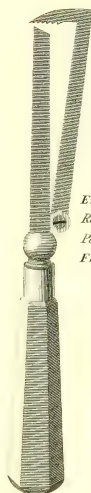


Fig. 2.



ELEVATOR for  
Raising Depressed  
Portions of a  
FRACTURED SKULL.

McRODMAN'S TREPANNING INSTRUMENT.

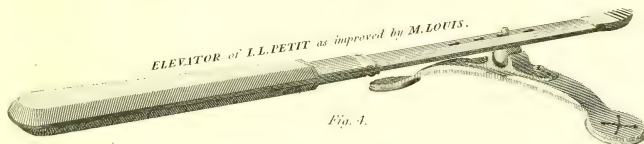
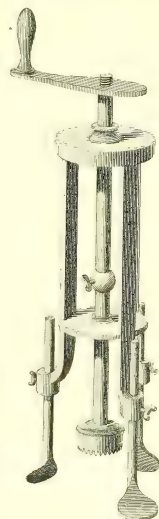


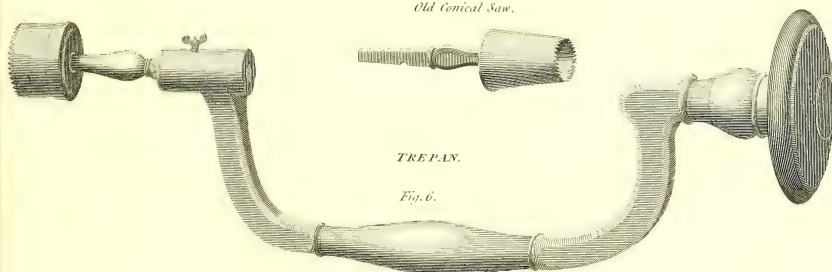
Fig. 5.

Old Conical Saw.

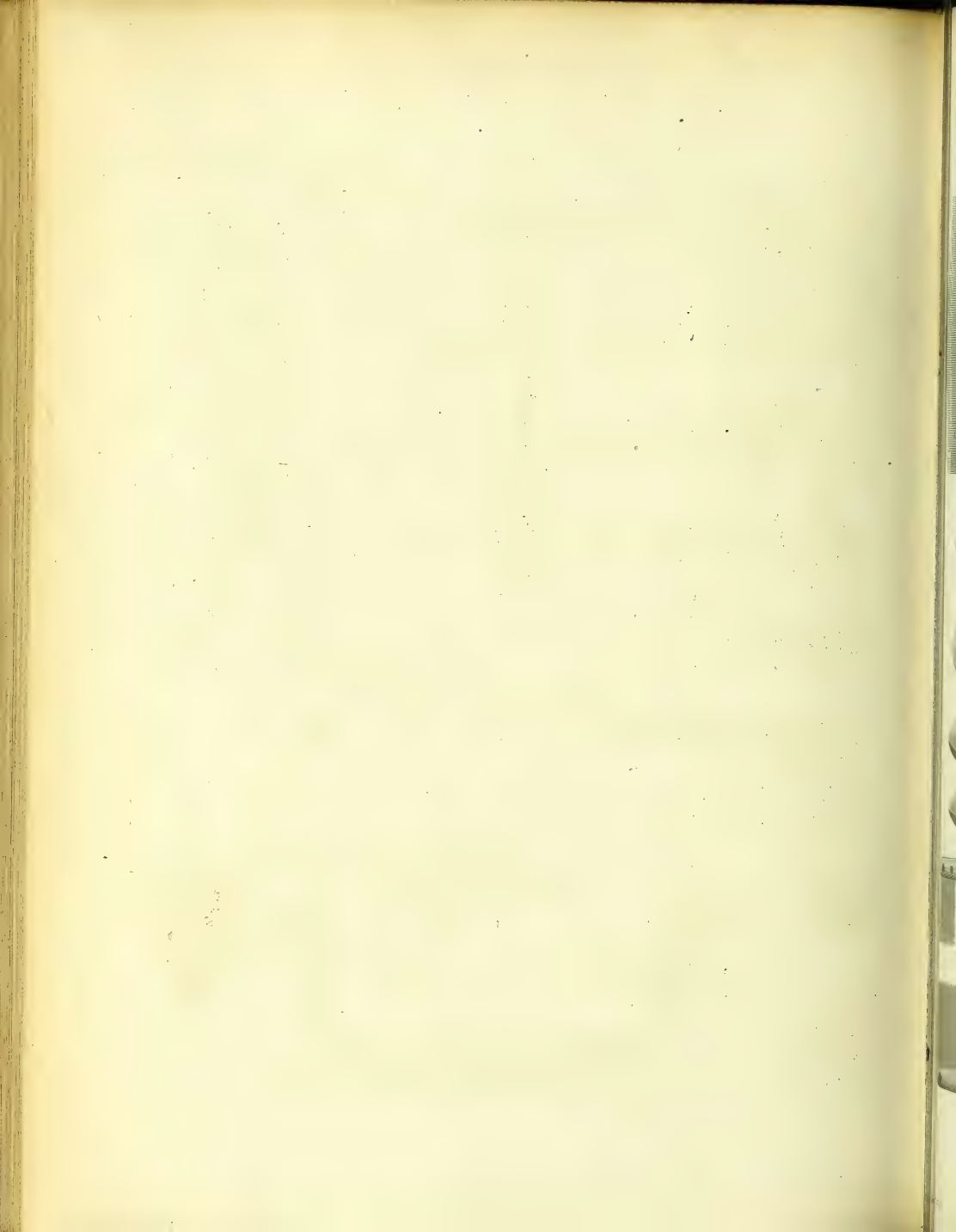


TREPAN.

Fig. 6.



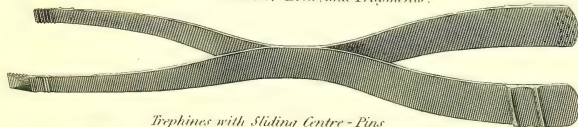




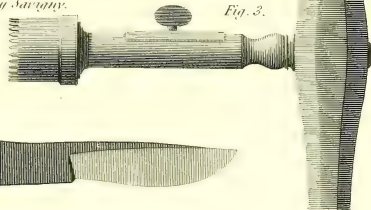
SURGERY.  
TREPANING INSTRUMENTS.

PLATE III.  
N<sup>o</sup> 2

*Fig. 1. Spring Forceps for Extracting the  
circle of Bone, and Fragments.*



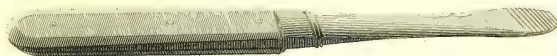
*Fig. 2. Trephines with Sliding Centre-Pins  
as made by Savigny.*



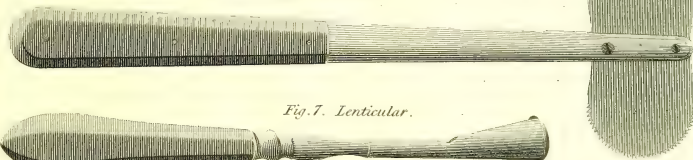
*Fig. 4. Scalpel.*



*Fig. 5. Common Elevator.*



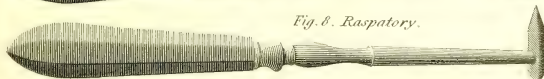
*Fig. 6. M<sup>r</sup> Hey's Saws with Curved Edges.*



*Fig. 7. Lenticular.*



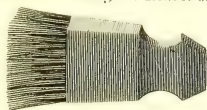
*Fig. 8. Raspatory.*



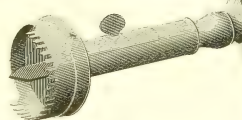
*Fig. 9. M<sup>r</sup> Hey's small straight Saw.*



*Brush for cleaning the Teeth of the Trephine.*



*Fig. 11.*



*Fig. 12. M<sup>r</sup> Hey's large straight Saw.*



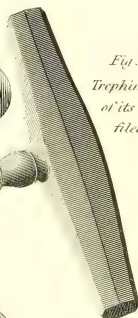
*Fig. 13.*

*Centre-pin  
and  
Screw.*



*Fig. 14.*

*Trephine with half  
of its Sawing Edge  
filed away.*





TRUSSES.

Fig. 1.



Fig. 2.

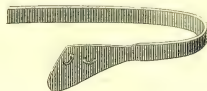


Fig. 3.

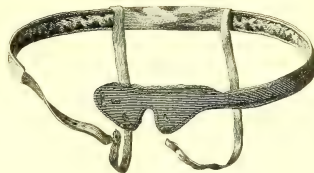
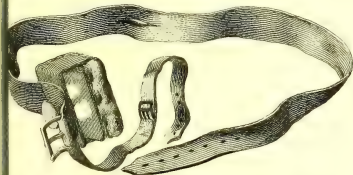


Fig. 4. D. Hulme's Palm Truss.



M. Whitford's Fig. 5.

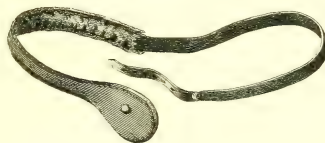
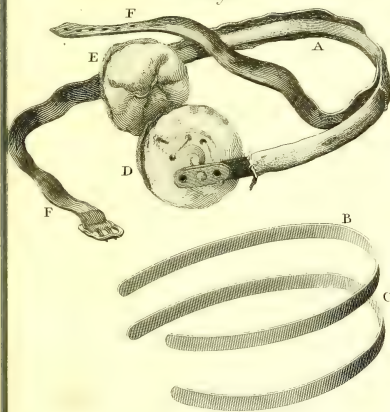
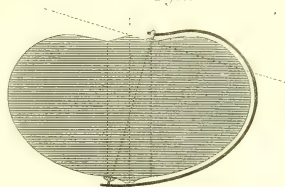


Fig. 7.



M. Salmon's Patent.

Fig. 7.



M. Morrison's for Exemphotes Fig. 8.

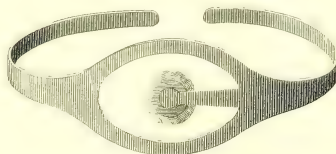


Fig. 10.



M. England's Fig. 9.

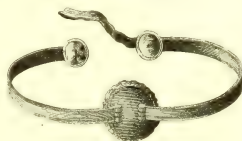


Fig. 11.







# SURGERY.

PLATE X.

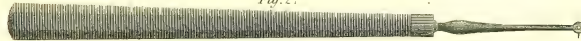
Instruments for the Extraction of the CATARACT,  
and for the Fistula Lachrymalis.

Fig. 1.



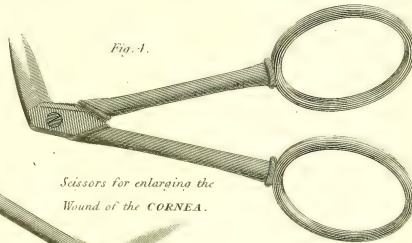
Minute Steel Tenaculum for extracting bits of the CAPSULE.

Fig. 2.



Cline's Instrument for dividing the CAPSULE.

Fig. 4.



Scissors for enlarging the  
Wound of the CORNEA.

Fig. 5.



Fig. 6.



Tube for injecting quinquina  
into the lachrymal sac.

Anell's Syringe and Pipes.

Fig. 7.



Fig. 8.



Fig. 9.



Fig. 10.



Watson's Tubes.

Ware's Stiles.

Fig. 11.

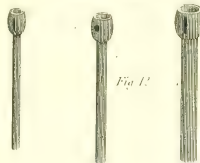
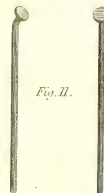


Fig. 12.



Small Lancet for puncturing  
The lachrymal sac.

Gibson's Knife for LITHOTOMY.

Fig. 13.



La Fage's Capsule for  
dividing the CAPSULE.

Fig. 3.

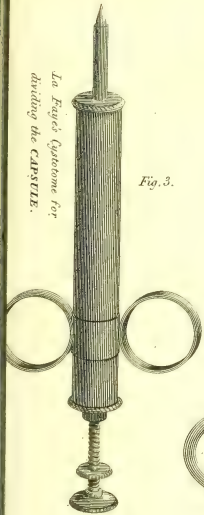
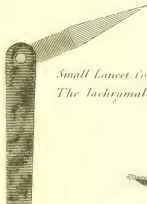
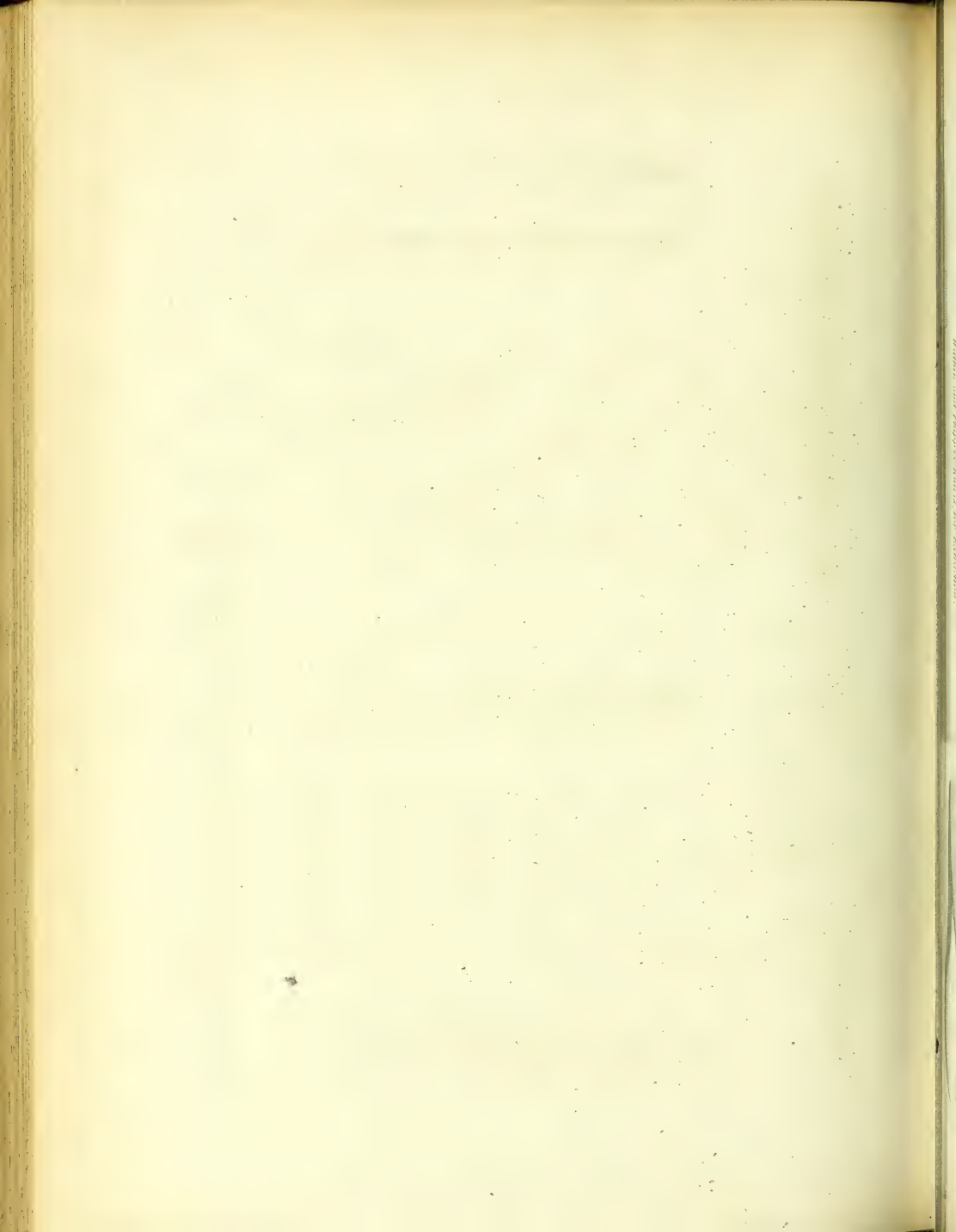
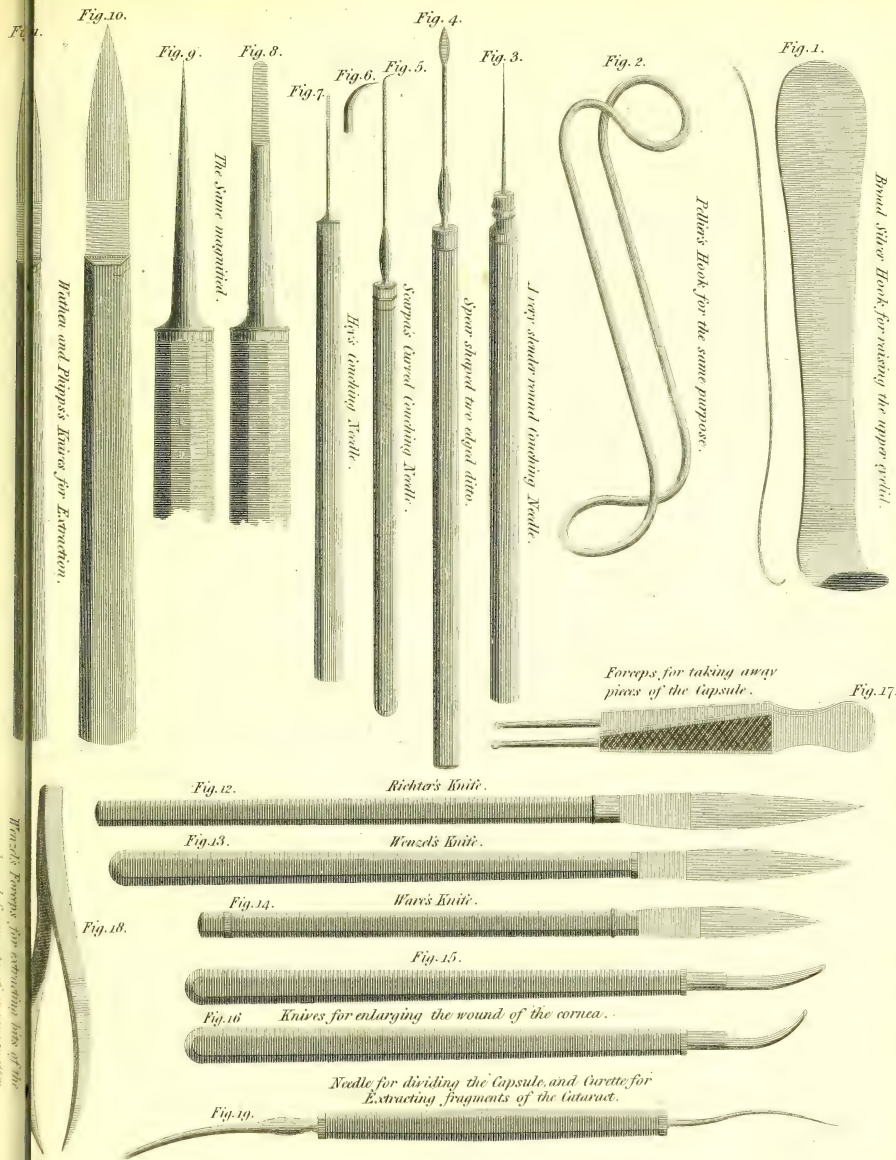


Fig. 14.



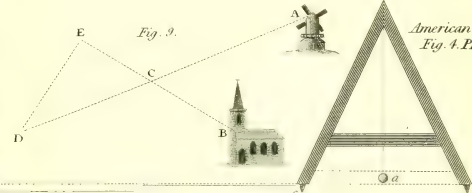
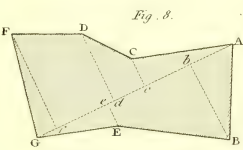
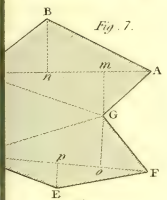
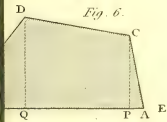
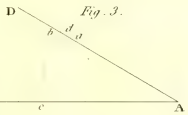
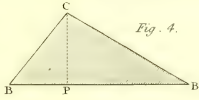
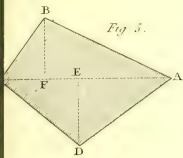
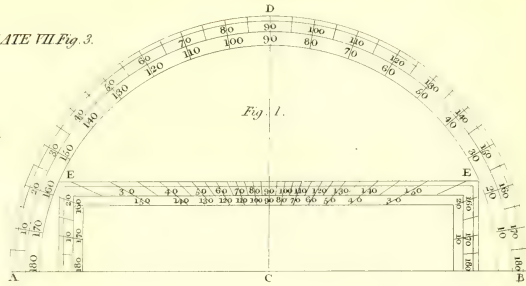


*Instruments for Couching and the Extraction of the Cataract.*





PROTRACTOR.



LEVEL.

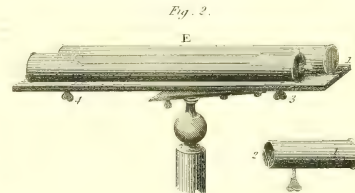
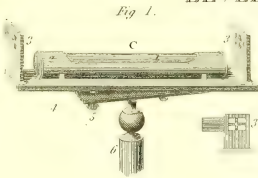
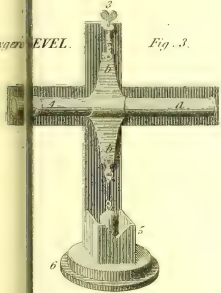


PLATE VI.

Decaqueter's LEVEL.

Fig. 7.

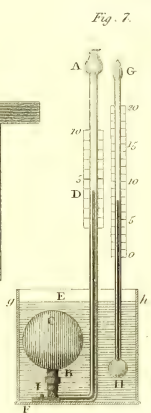


Fig. 8.



Fig. 9.

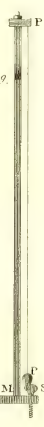


Fig. 10.



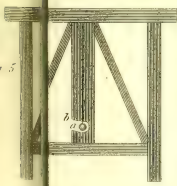
Fig. 11.



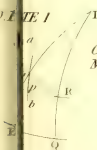
Fig. 6.



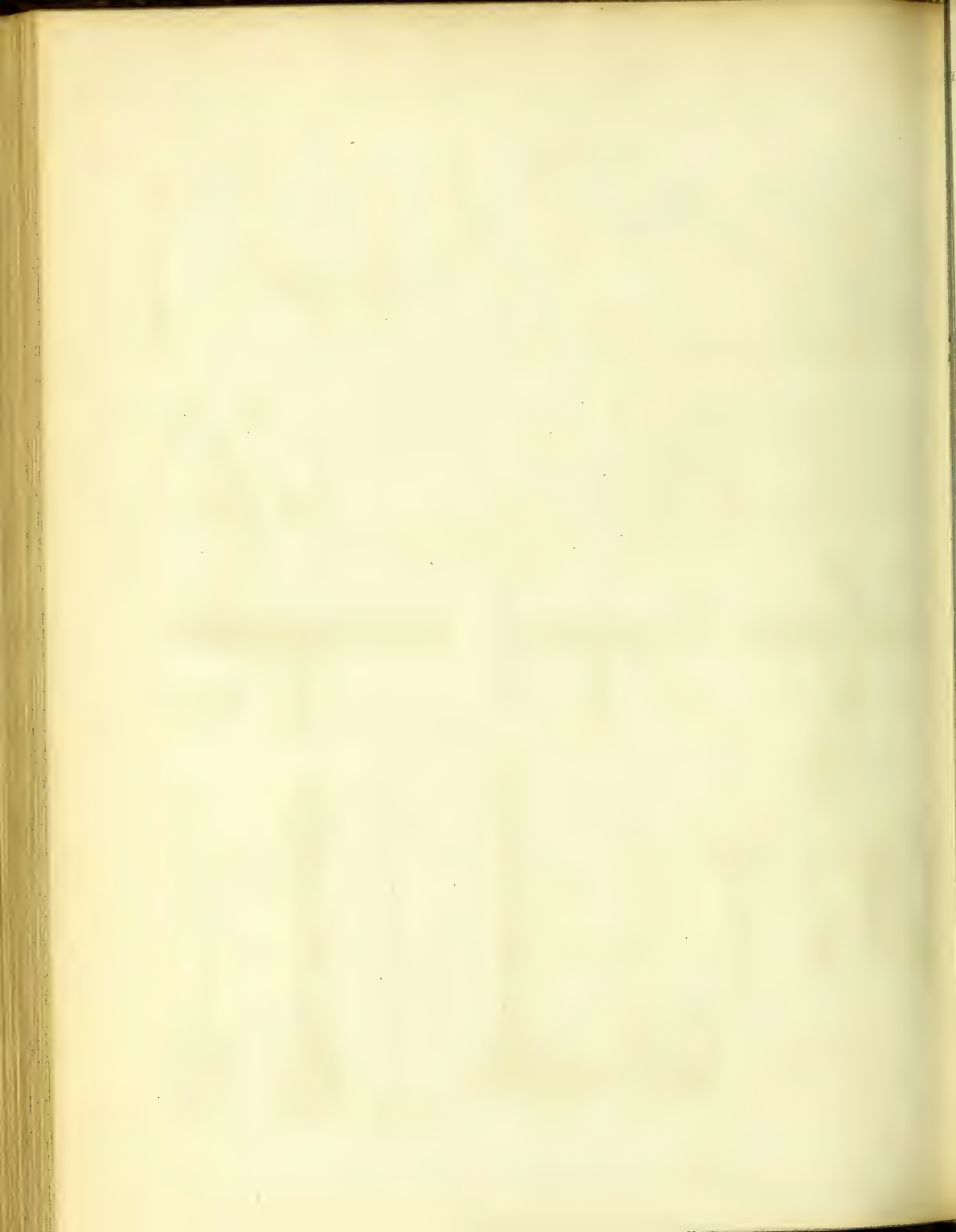
Wing LEVEL.



Convergency of MERIDIANS.

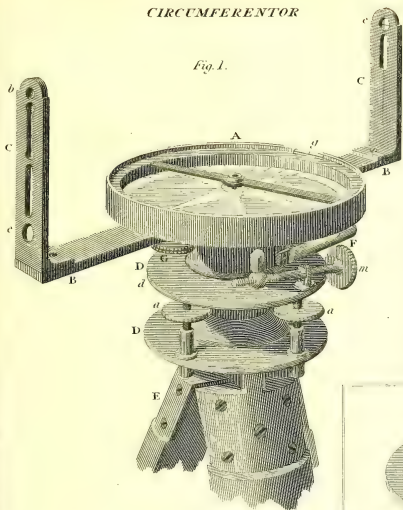






CIRCUMFERENTOR

Fig. 1.



CROSS

Fig. 1.

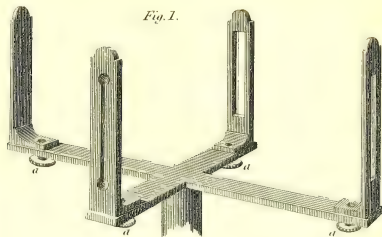


Fig. 2.

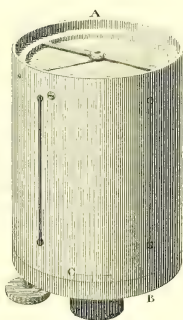


Fig. 5.

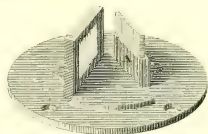


Fig. 2.

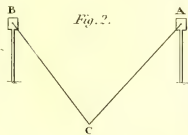


Fig. 4.

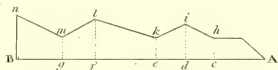


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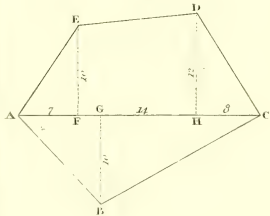


Fig. 6.

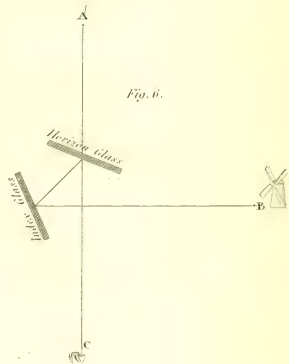
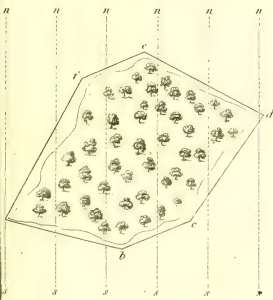
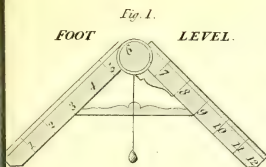


Fig. 3.







Artillery foot LEVEL.

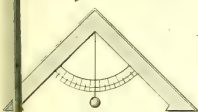


Fig. 6.

Gunnery's LEVEL.

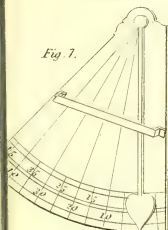


Fig. 7.

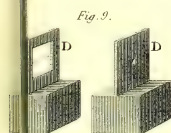


Fig. 9.

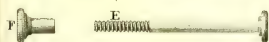


Fig. 10.



Fig. 11.

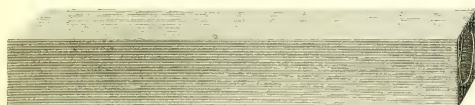
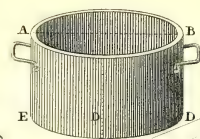


Fig. 12.



GAUGING.

Fig. 2.

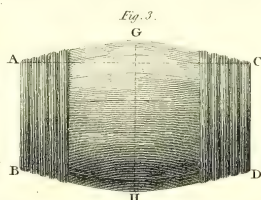


Fig. 3.



LEVEL.



Fig. 5.

Mercurial LEVEL.



Fig. 8.

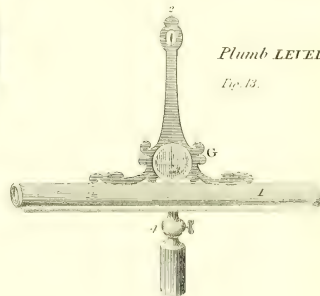


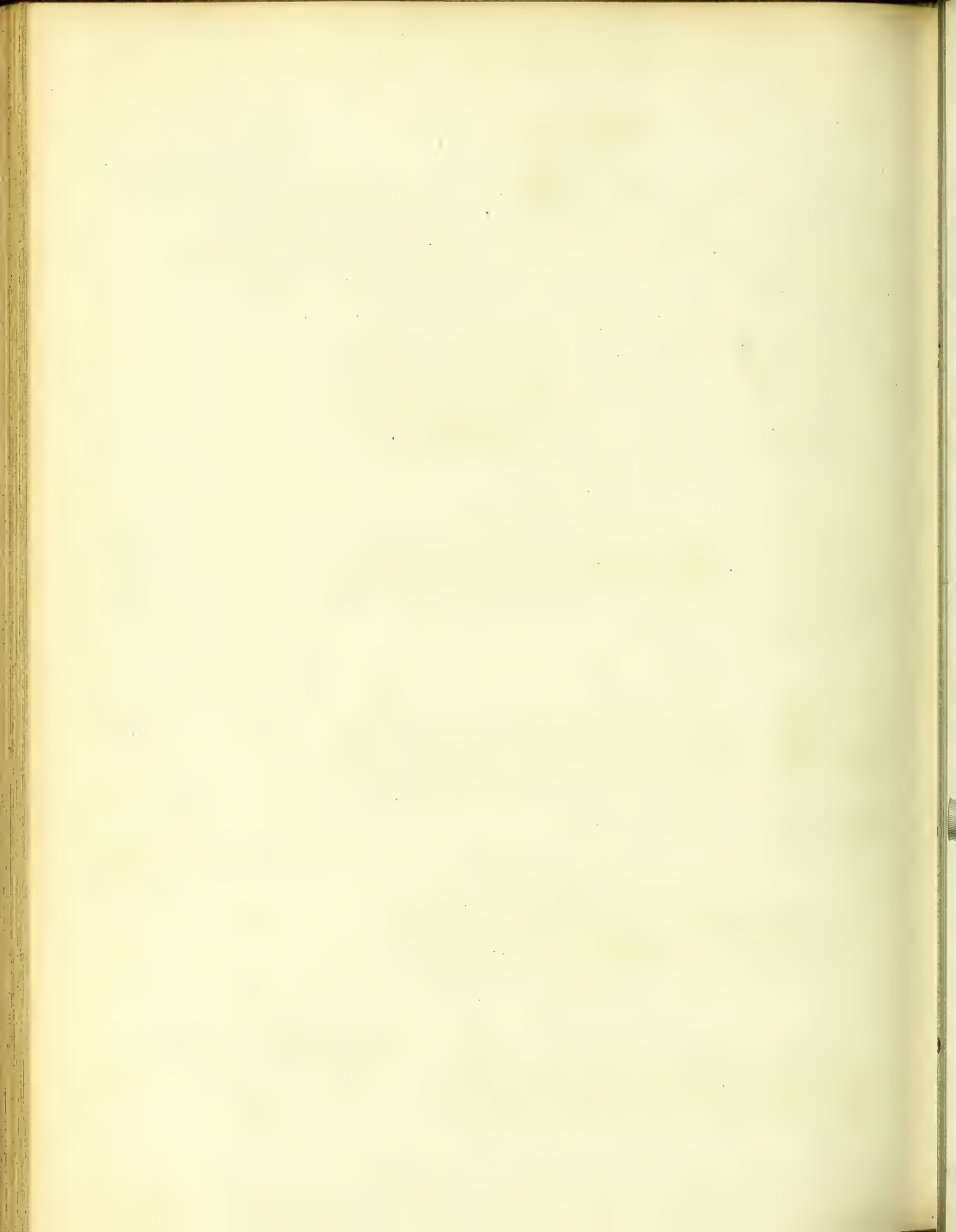
Fig. 10.

Fig. 4.									
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11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

Plumb LEVEL.

Fig. 13.







# SURVEYING.

## LEVELS.

PLATE V.

by Mr. Ramsden.

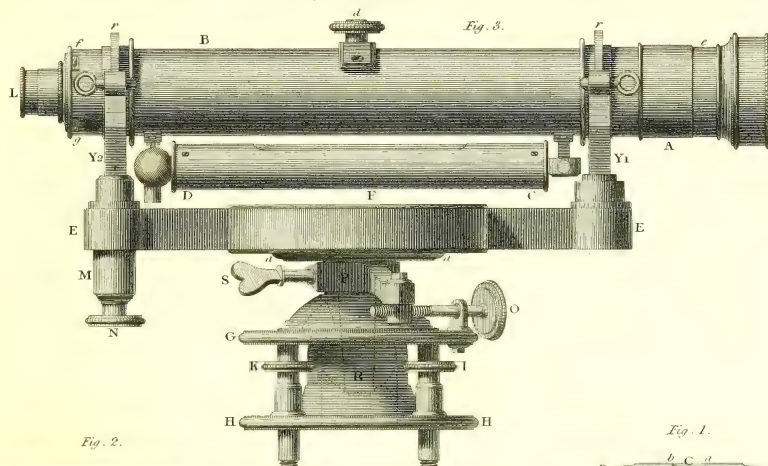
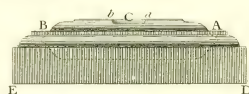


Fig. 3.

Fig. 2.

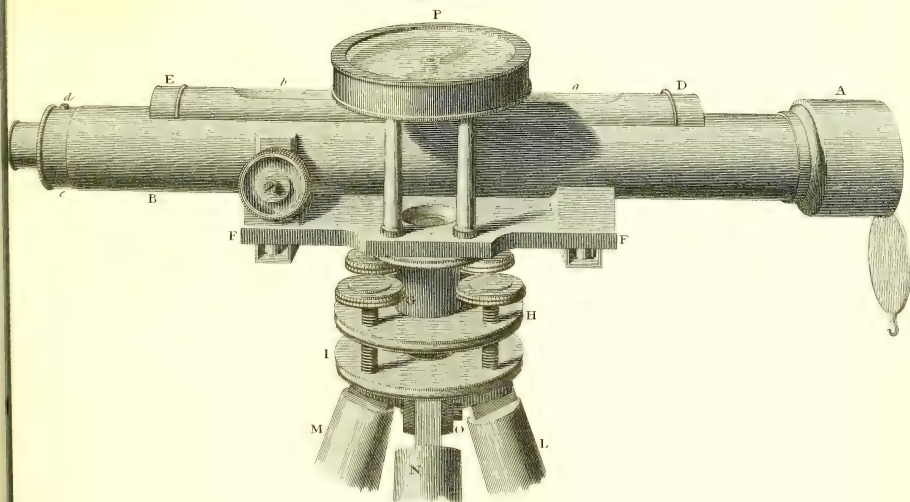


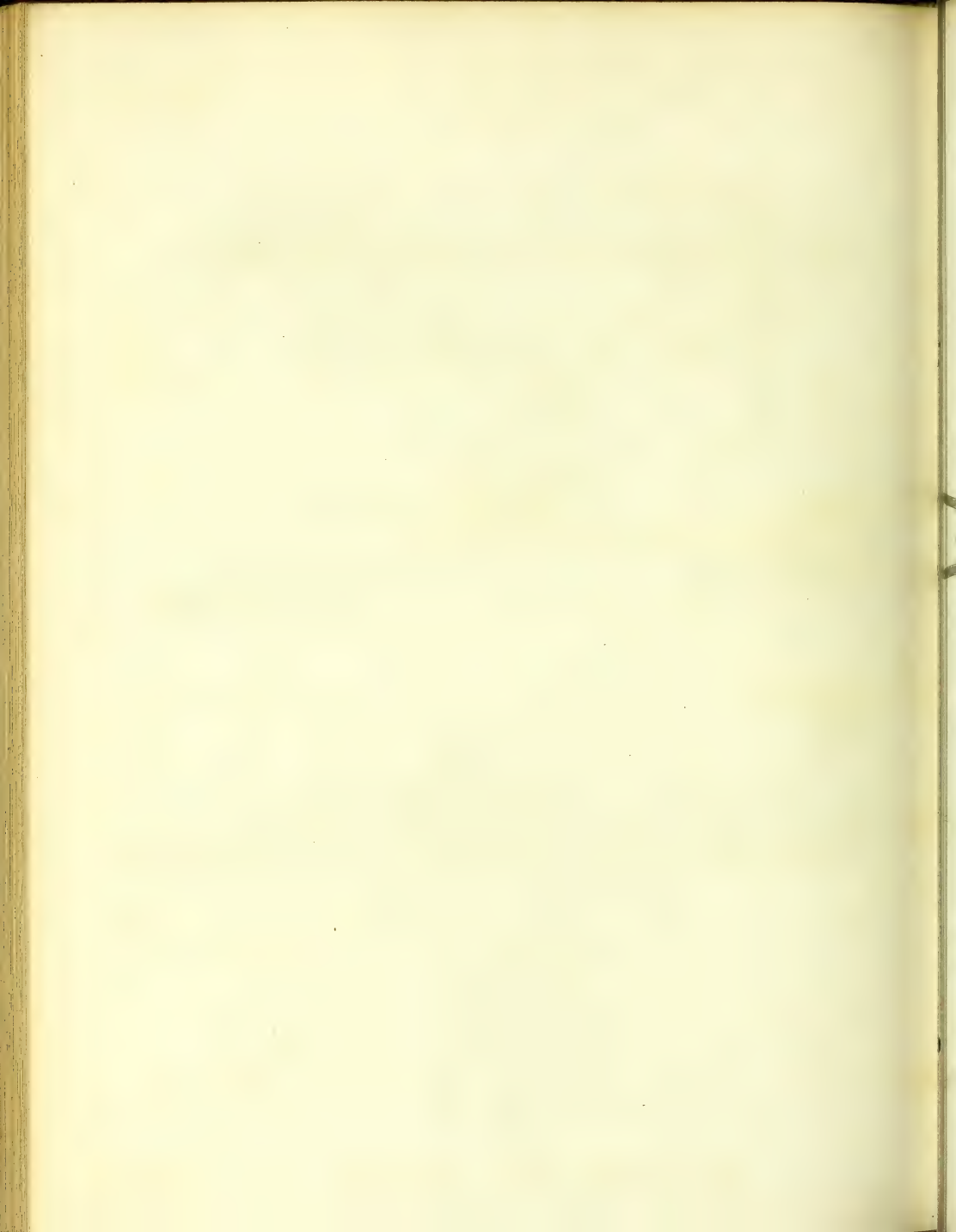
Fig. 1.



Mr. Troughton's.

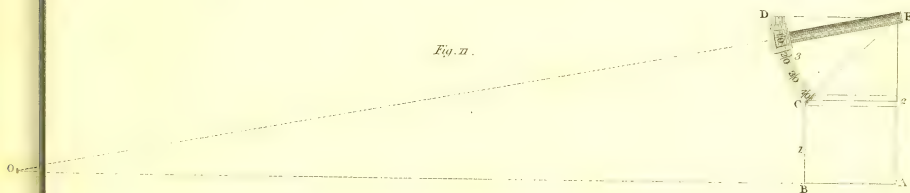
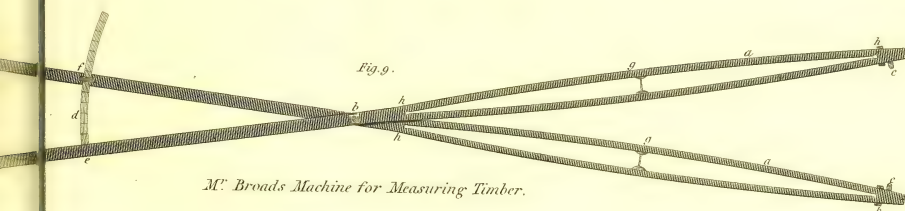
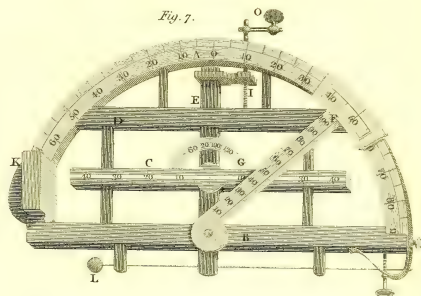
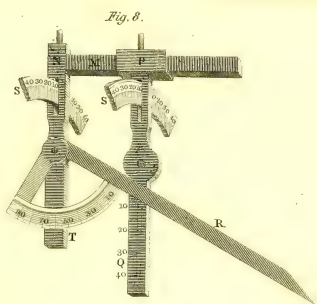
Fig. 1.





**SURVEYING.**  
**DENDROMETERS.**

PLATE VI.





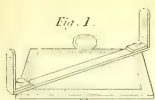


Fig. 1.



Fig. 2.



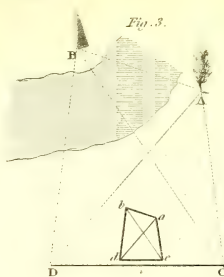
Fig. 3.



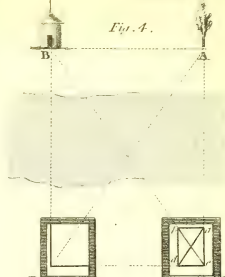
Fig. 4.



D



D



D

Fig. 6.

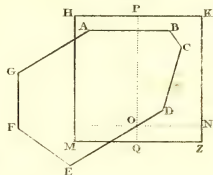


Fig. 12.

Fig. 7.

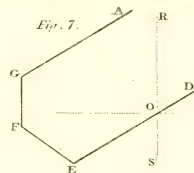
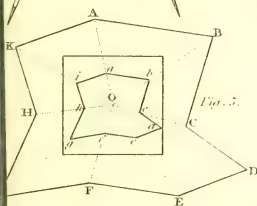


Fig. 5.



PERAMBULATOR

Fig. 10.

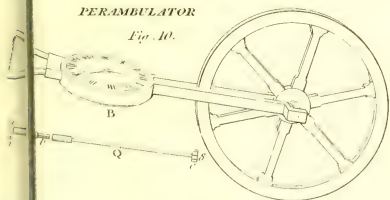
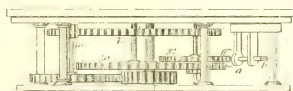
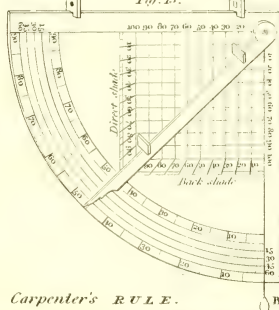


Fig. 9.

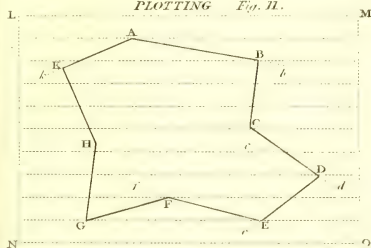


QUADRANT

Fig. 13.



PLOTTING Fig. 11.

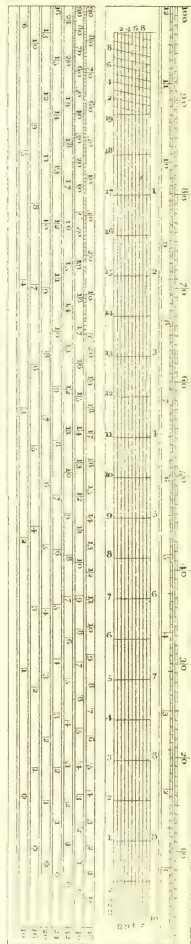


Carpenter's RULE.

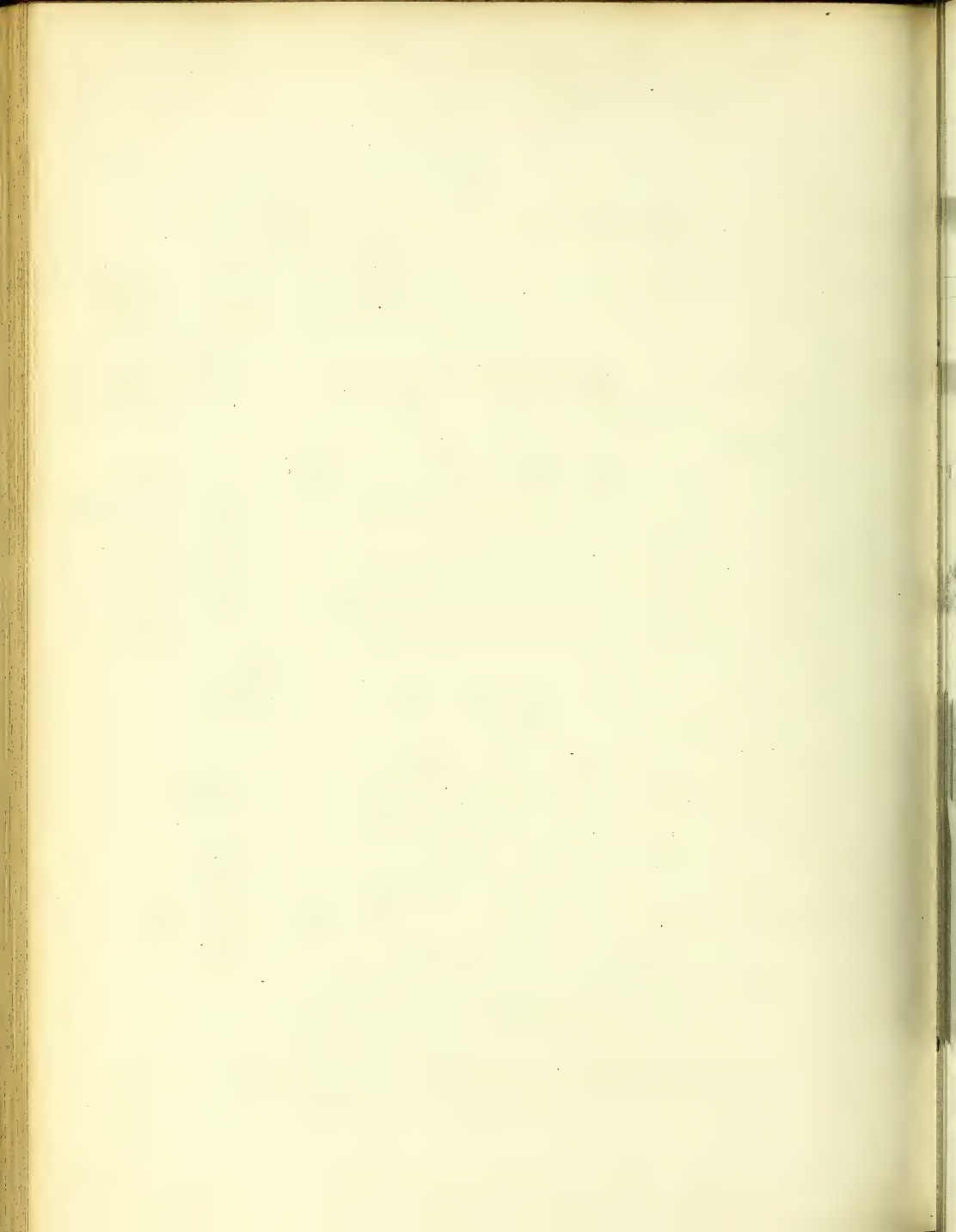
Fig. 14.



PLOTTING SCALE.







# SURVEYING . LEVELLING .

PLATE VII.

Fig 1.

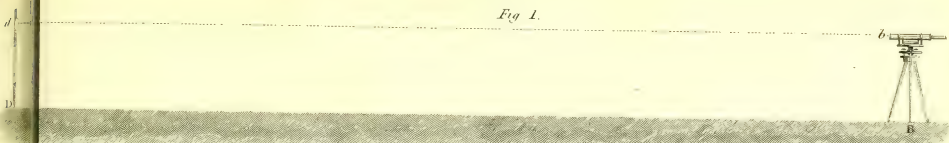


Fig 2.

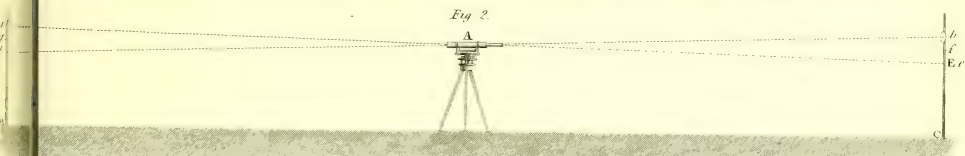


Fig 4.

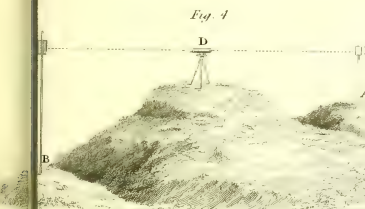


Fig 5.

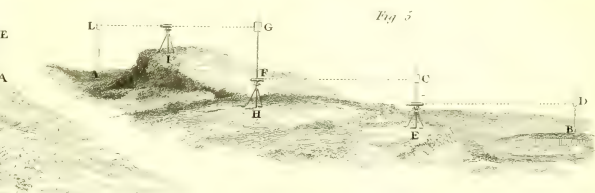


Fig 7.

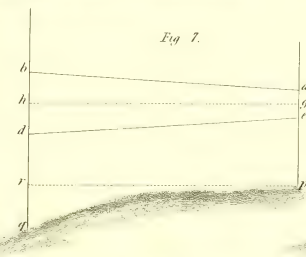


Fig 8.

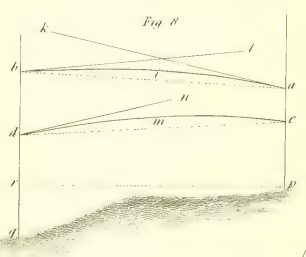


Fig 10.

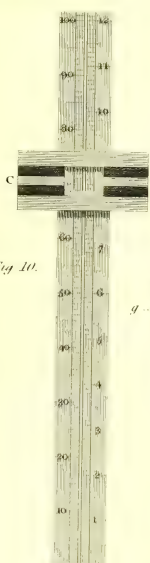


Fig 6.

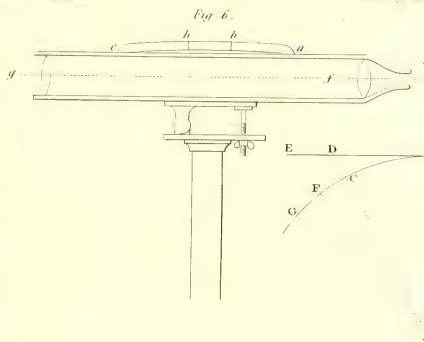


Fig 9.

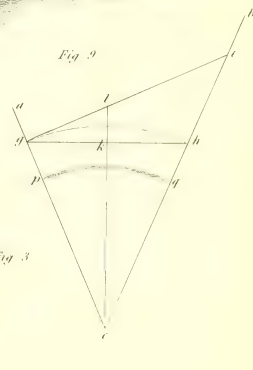
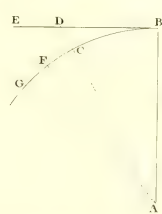


Fig 3.





# SURVEYING.

*Dr Roget's SLIDING Rule.*

Fig. 9.

SECTOR

Fig. 1.

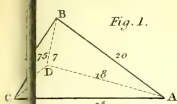
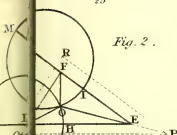
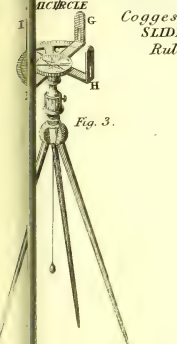


Fig. 2.



*Coggeshall's SLIDING Rule.*

Fig. 3.



*Everard's SLIDING Rule.*

Fig. 4.

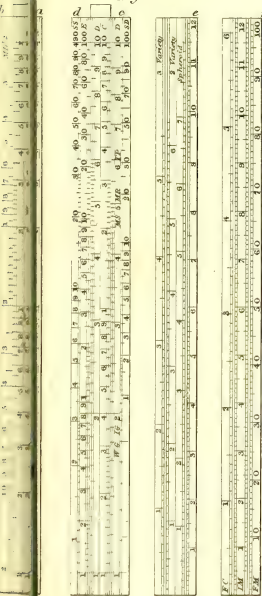


Fig. 5.

Fig. 6.

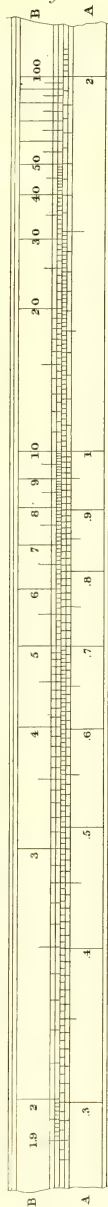


Fig. 7.

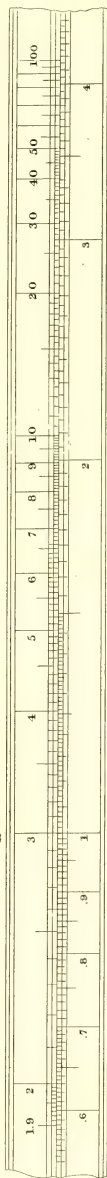
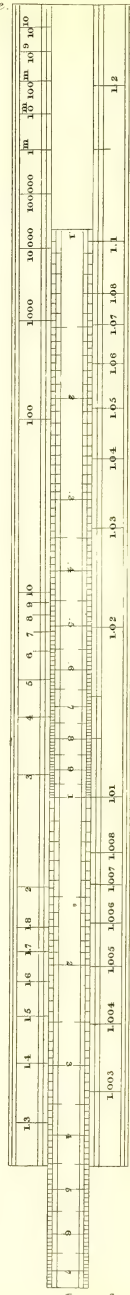
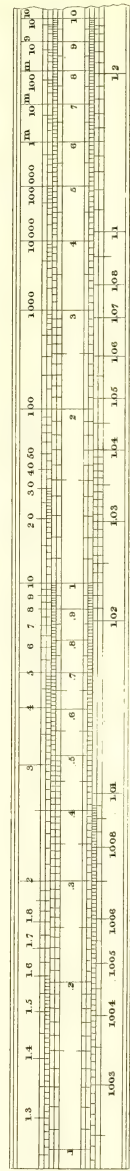
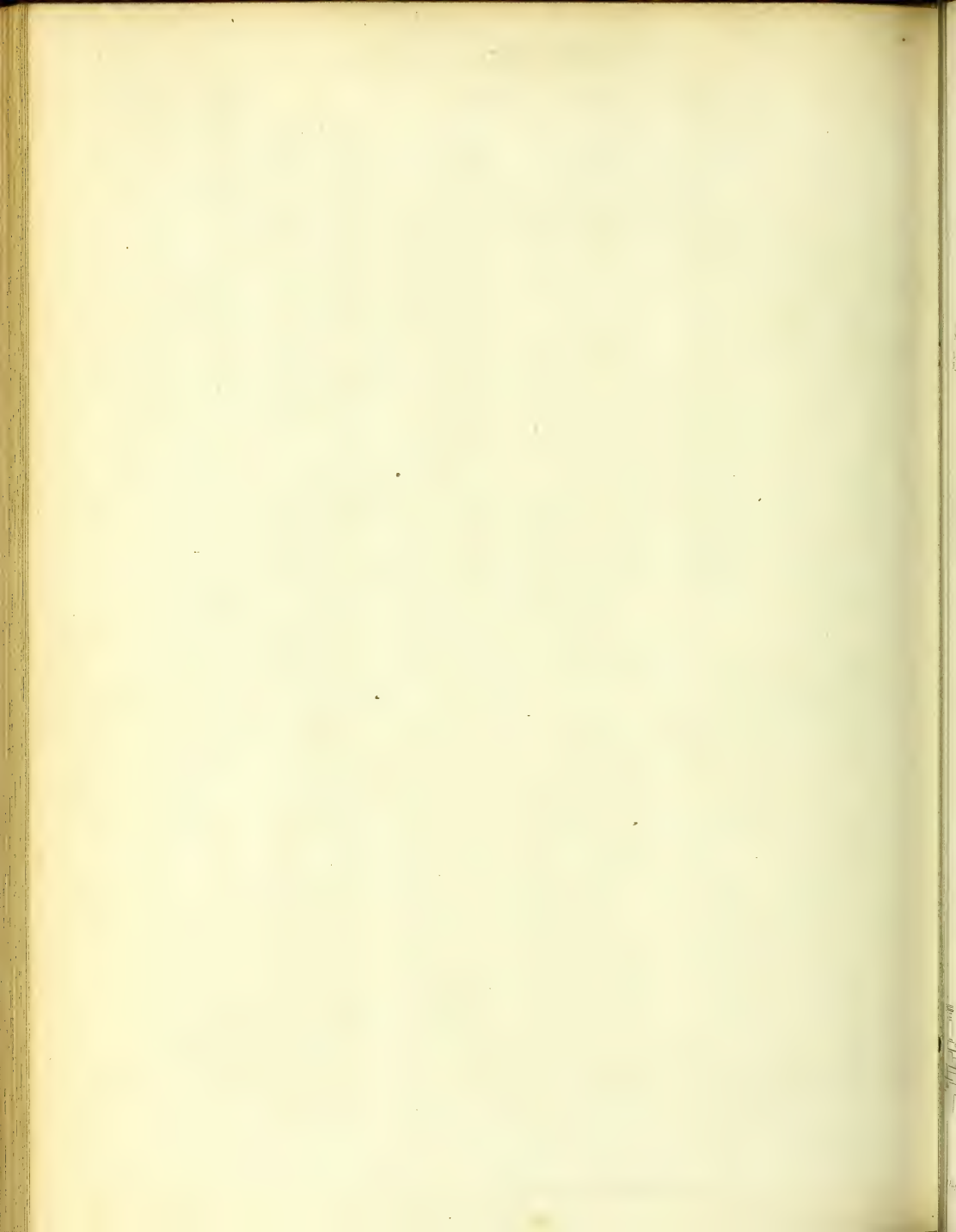


Fig. 8.







Grand THEODOLITE by Ramsden.

Fig. 5.

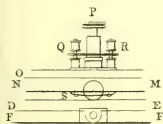


Fig. 4.

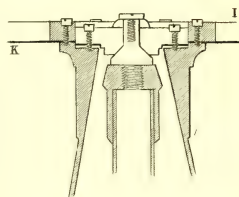


Fig. 1.

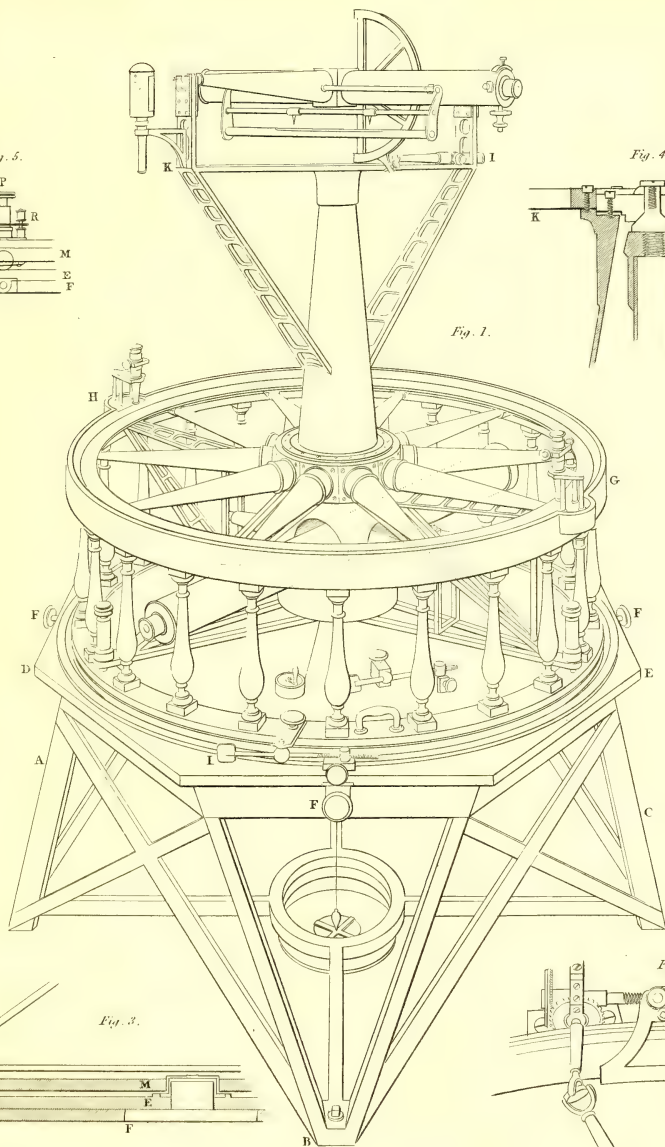


Fig. 3.

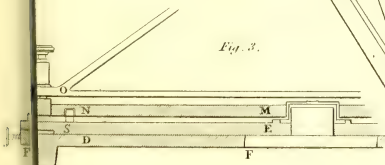
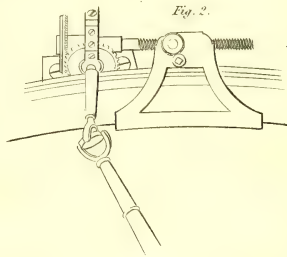
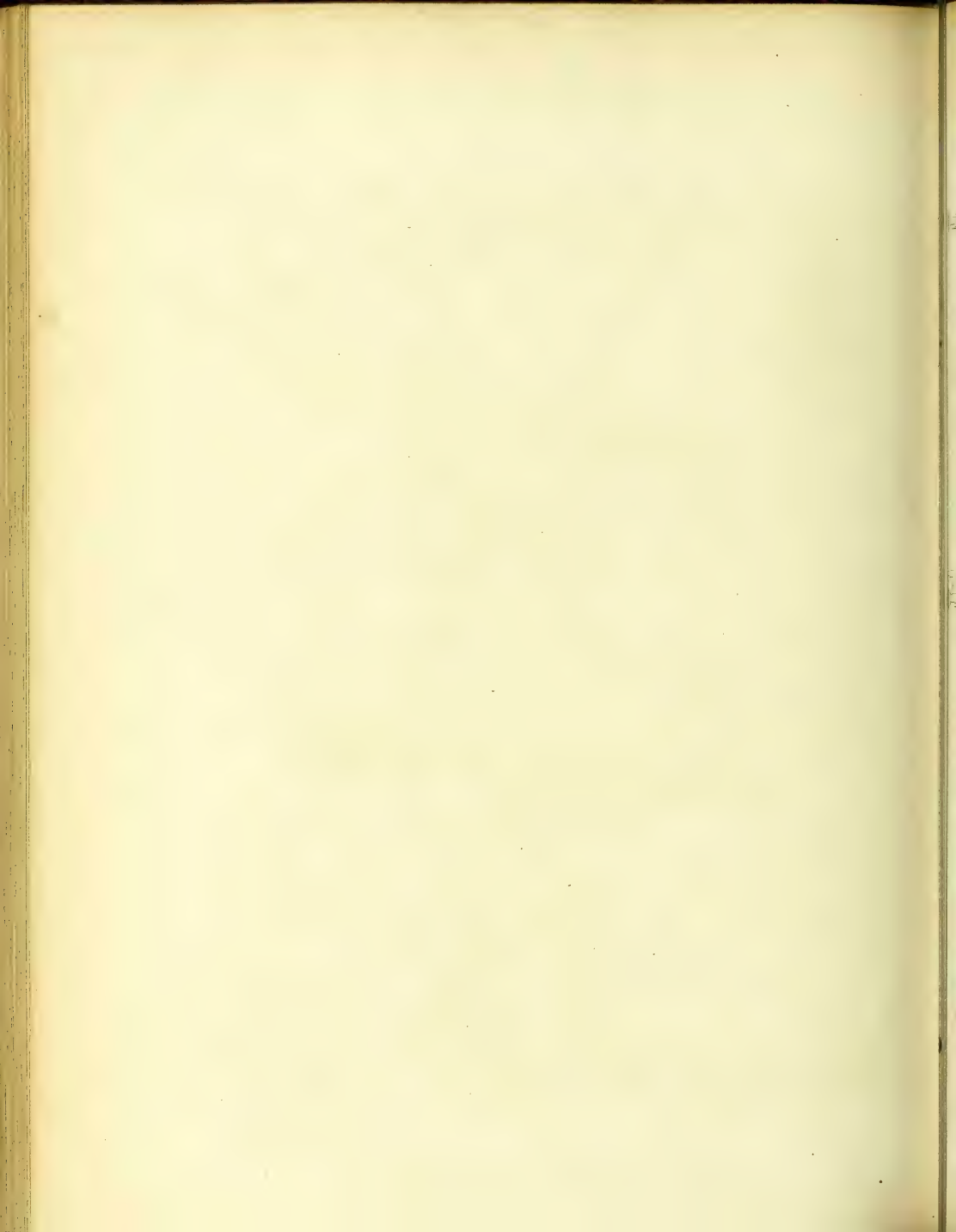


Fig. 2.





# SURVEYING.

*Portable THEODOLITE by Troughton.*

PLATE IX.

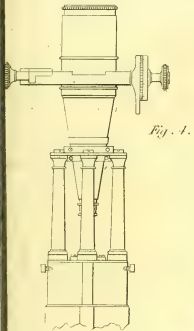


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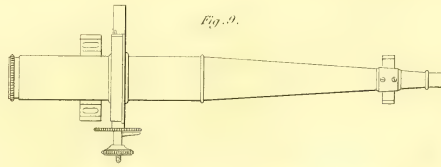


Fig. 9.

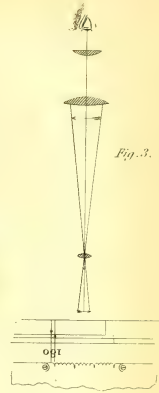


Fig. 3.

Fig. 1.

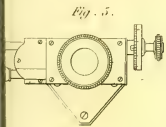
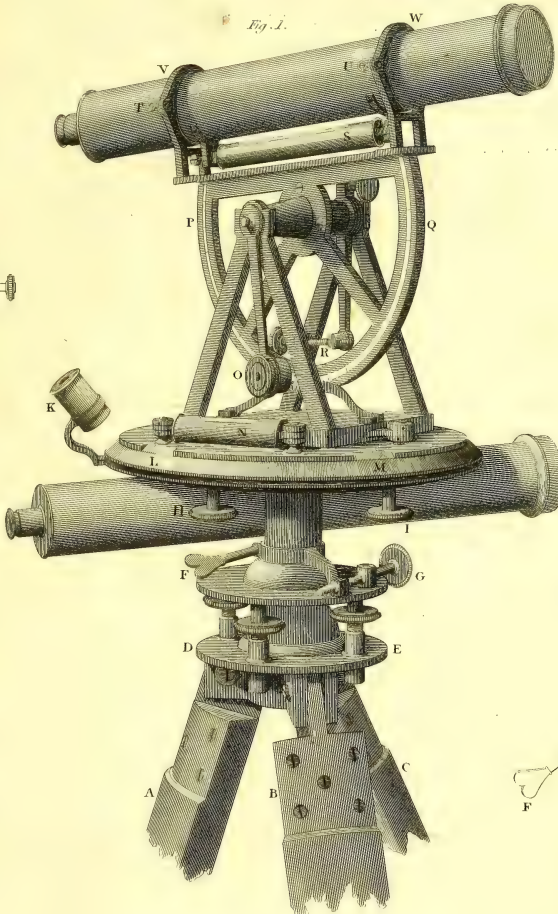


Fig. 5.

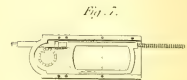


Fig. 7.



Fig. 6.

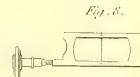


Fig. 8.

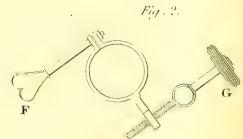


Fig. 2.

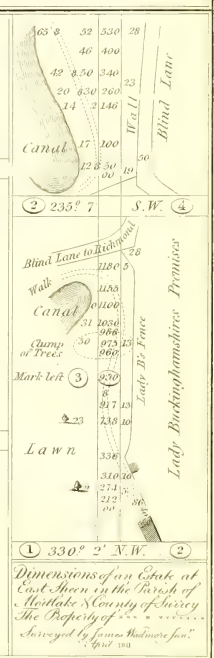
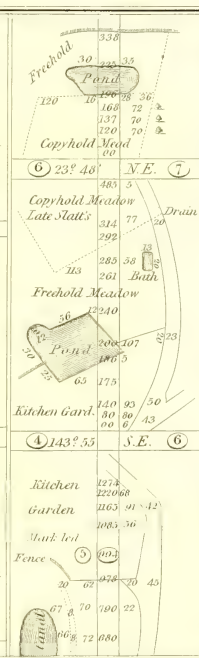
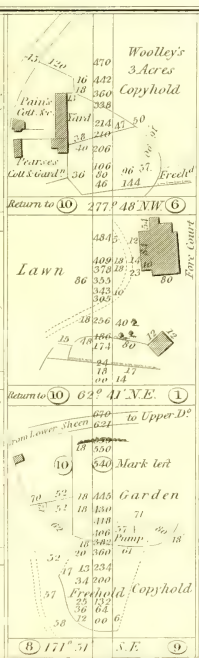
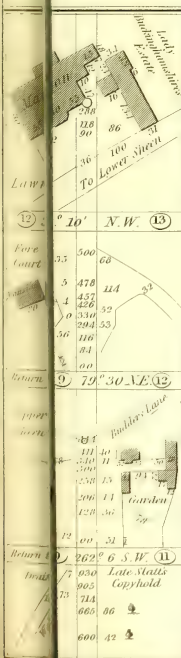
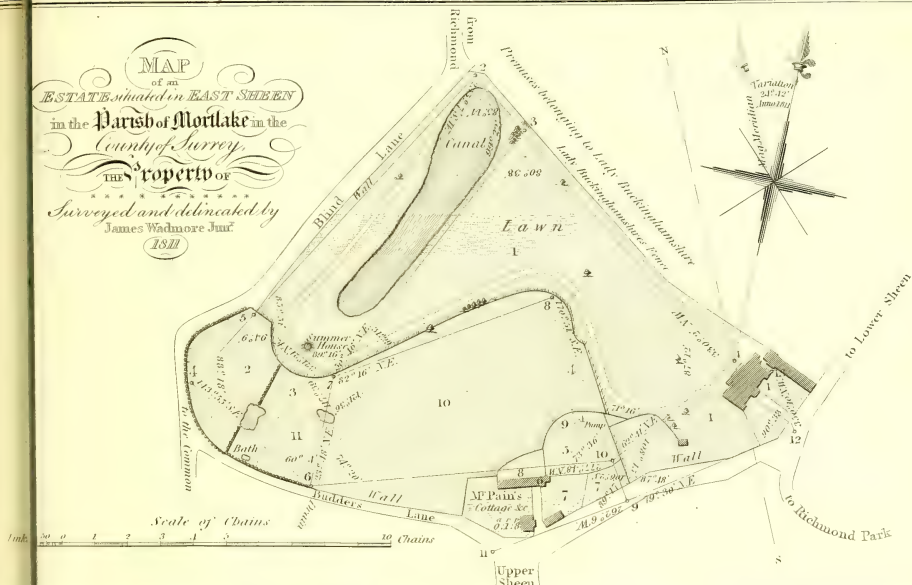




# SURVEYING, THEODOLITE

Plate X

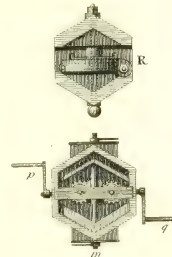
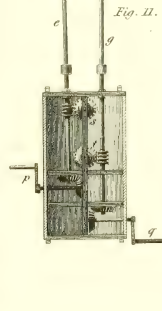
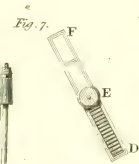
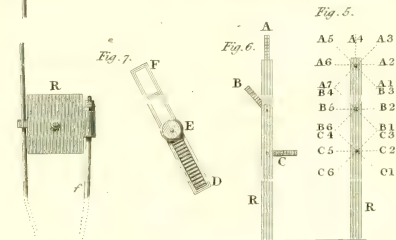
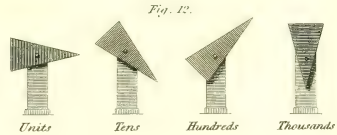
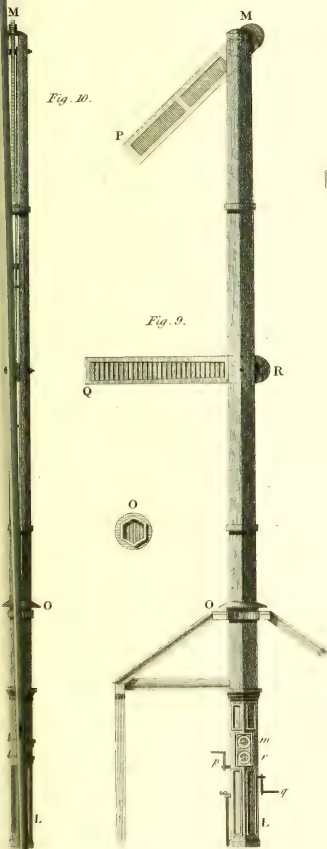
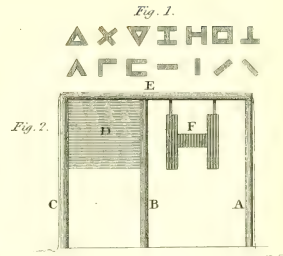
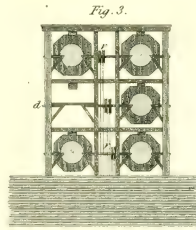
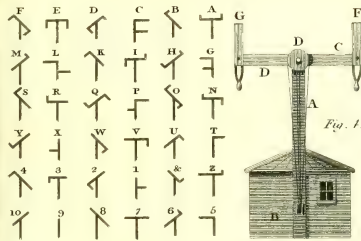
MAP  
of an  
ESTATE situated in EAST SHEEN  
in the Parish of Mortlake in the  
County of Surrey.  
THE PROPERTY OF  
Surveyed and delineated by  
James Wadmore Junr  
1811







# TELEGRAPH



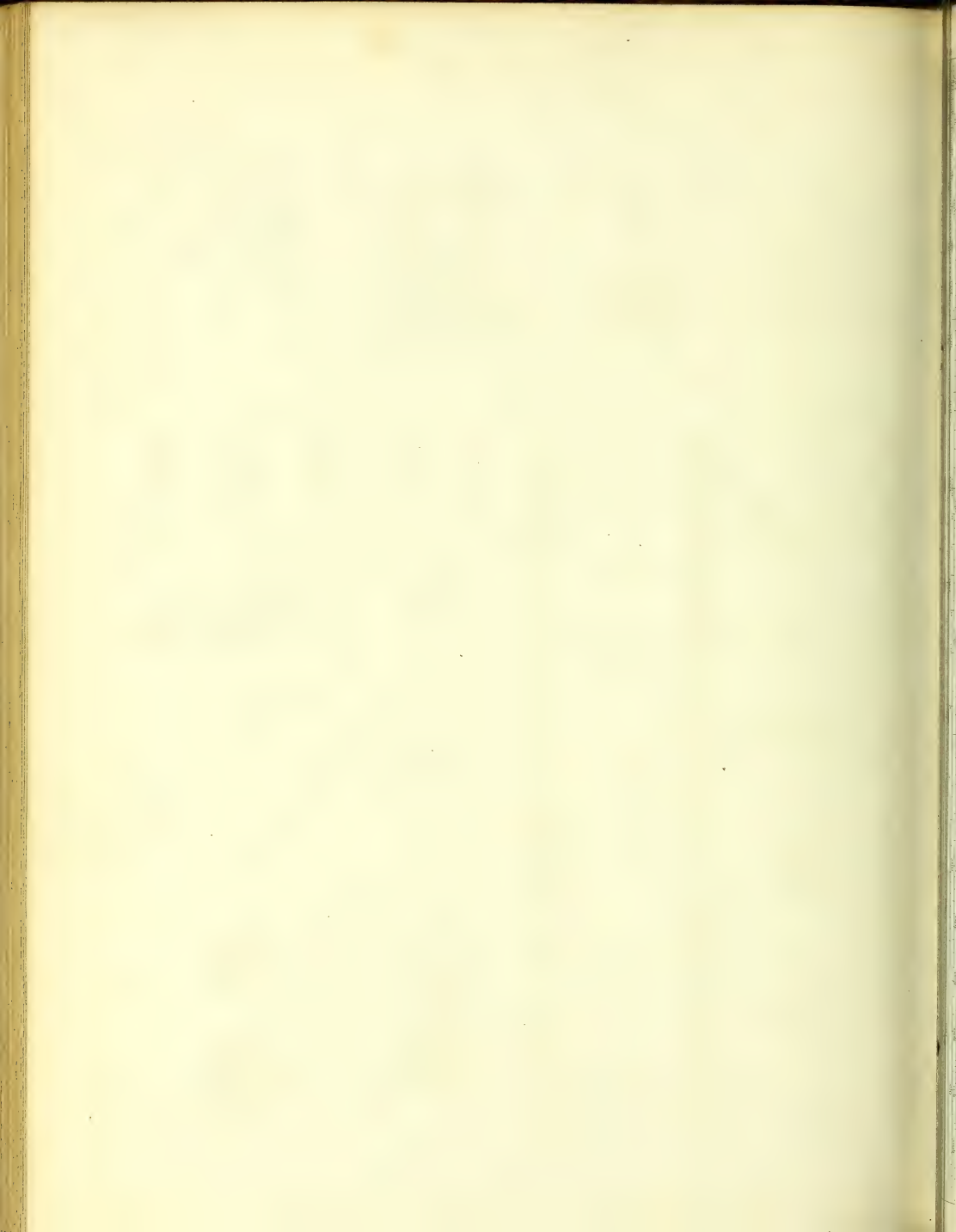


Fig. 1.

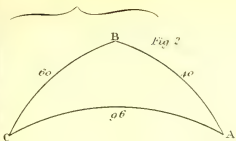


Fig. 6.

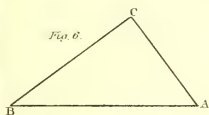
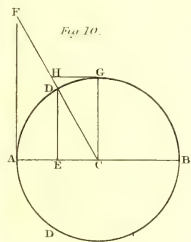
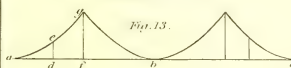


Fig. 10.



VERSED SINES

Fig. 13.



SECANTS

Fig. 16.

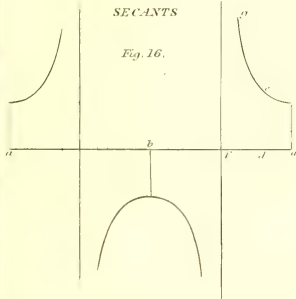


Fig. 19.

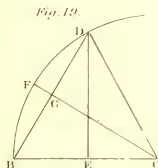


Fig. 20.

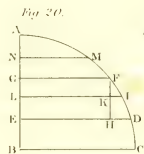


Fig. 21.

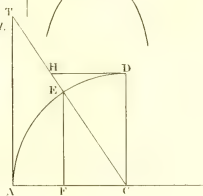
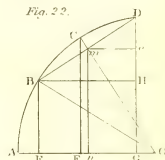


Fig. 22.



PART  
Fig. 3.

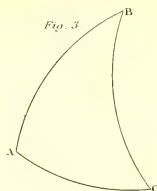


Fig. 7.

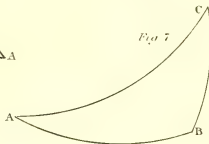
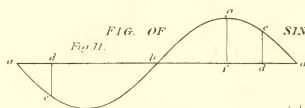


FIG. OF

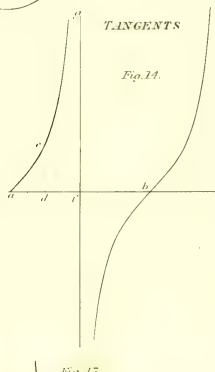
SINES

Fig. 11.



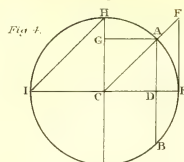
TANGENTS

Fig. 14.



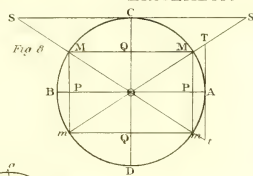
SECANT & SINE

Fig. 4.



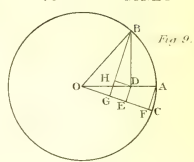
ARITHMETIC

Fig. 8.



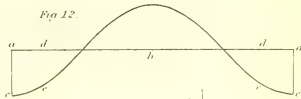
OF SINES

Fig. 9.



COSINES

Fig. 12.



COTANGENTS

Fig. 15.

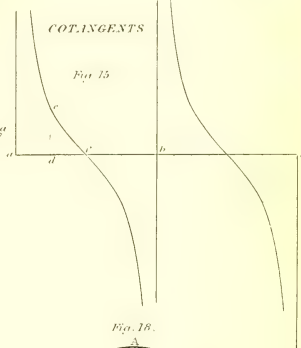
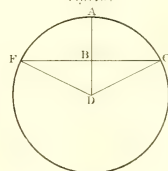


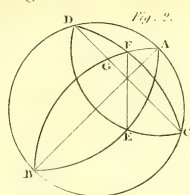
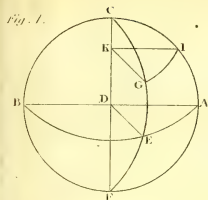
Fig. 18.



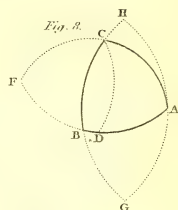
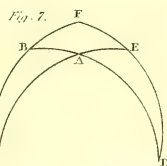
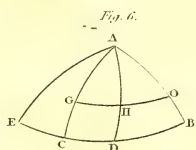
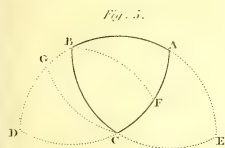
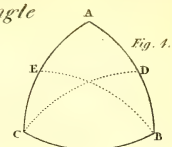
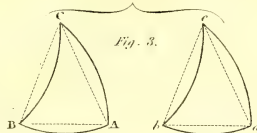




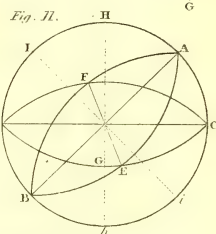
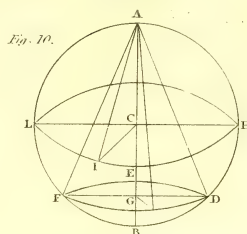
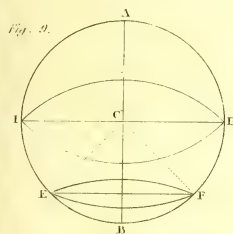
*SPHERICAL Angle*



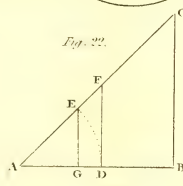
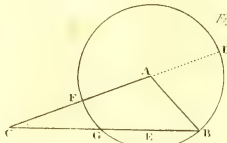
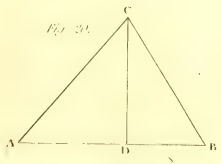
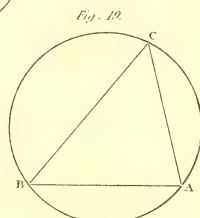
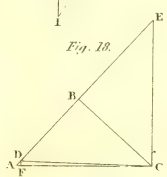
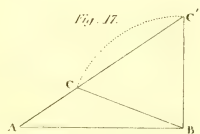
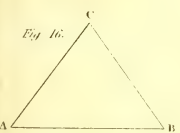
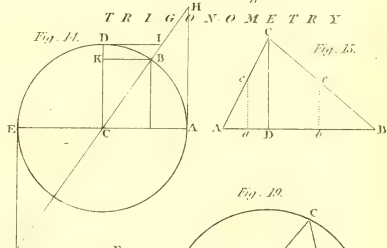
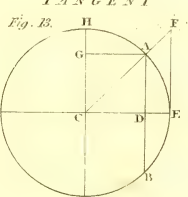
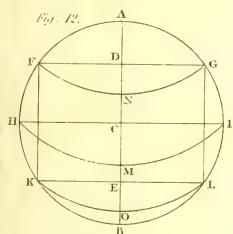
*SPHERICAL Triangle*



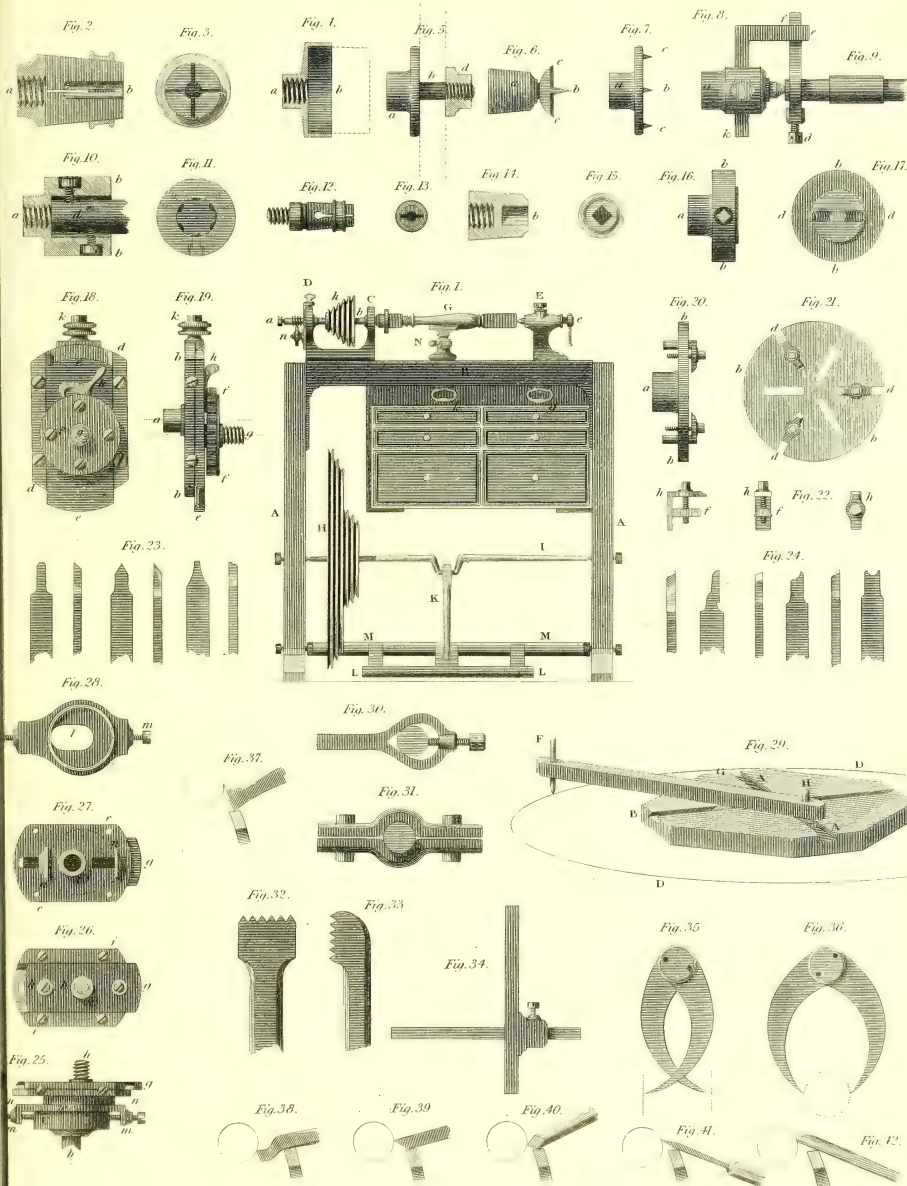
*SPHERICS*

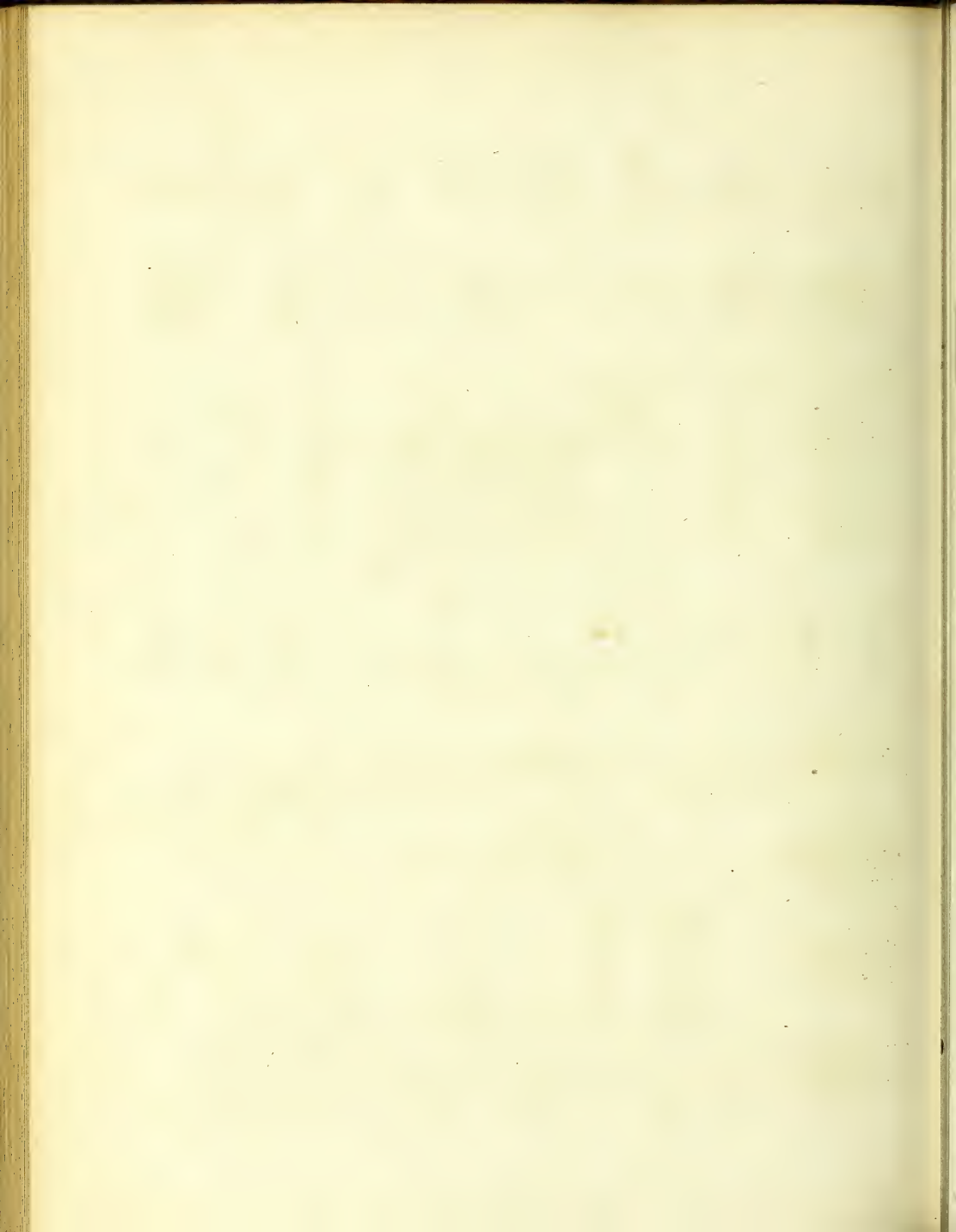


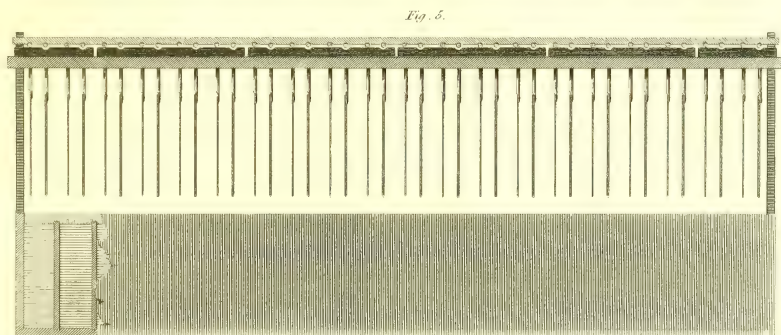
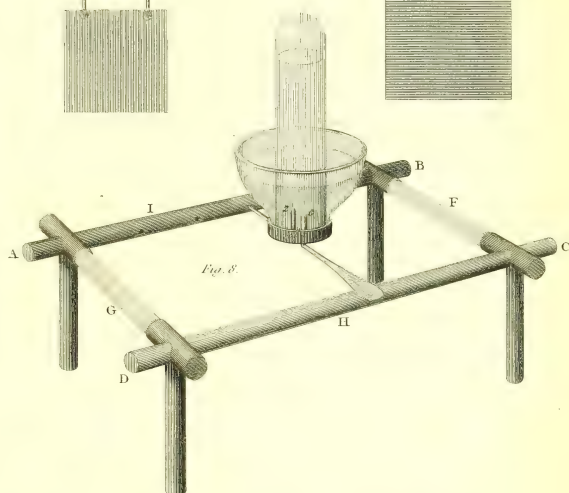
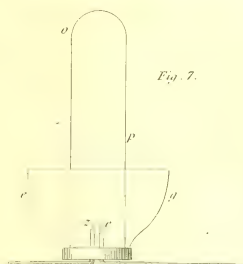
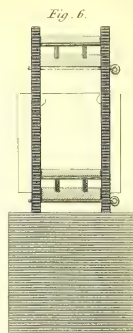
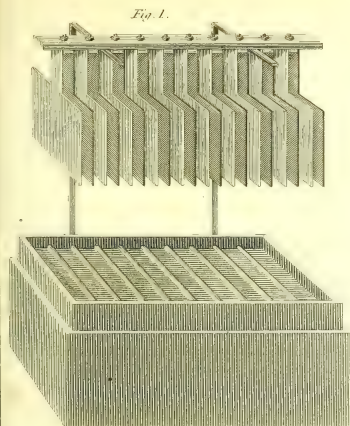
*TANGENT*















# WATER WHEELS. OVER SHOT and UNDER SHOT.

PLATE I.

Fig. 2.

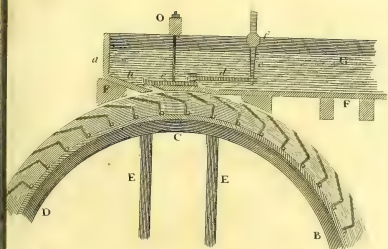


Fig. 1.

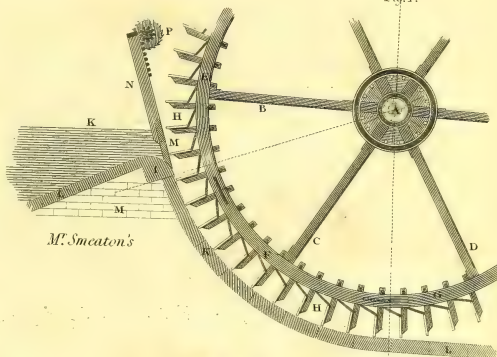


Fig. 4.

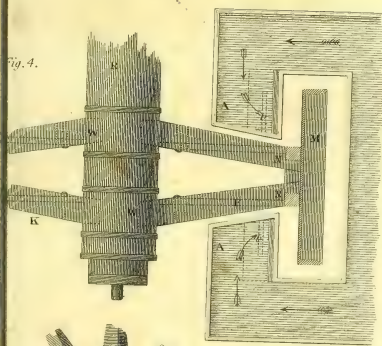


Fig. 3.

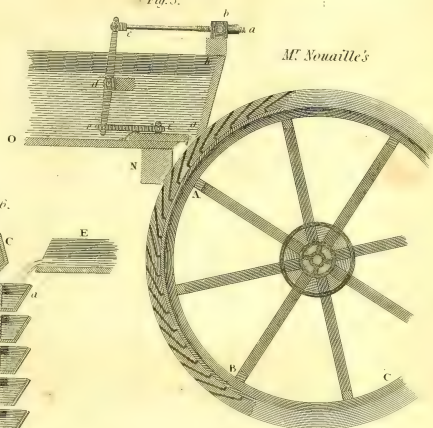


Fig. 6.

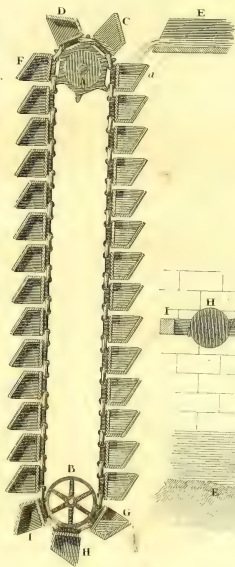
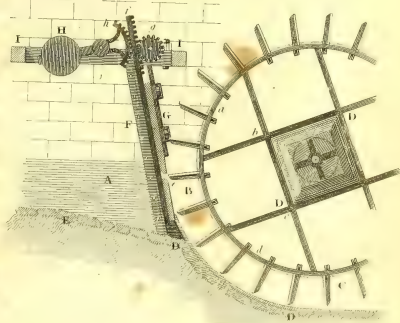
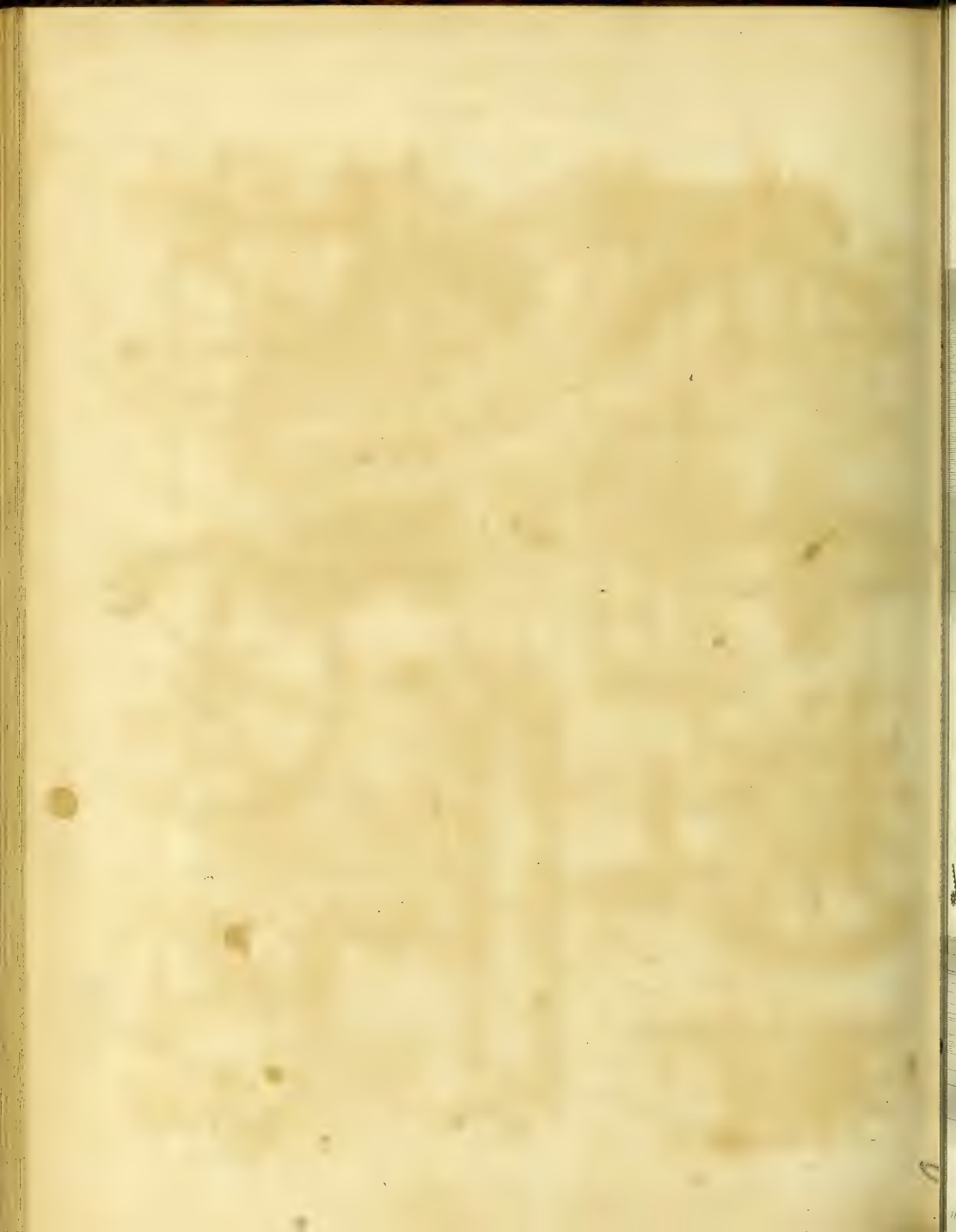


Fig. 7.

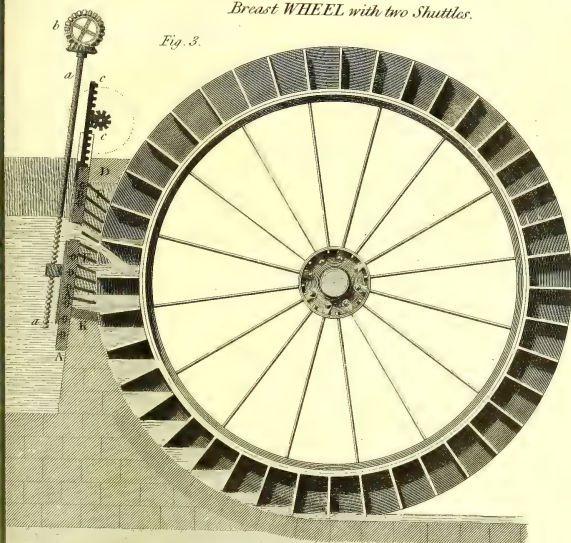






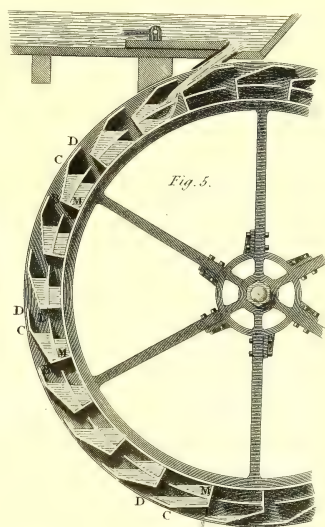
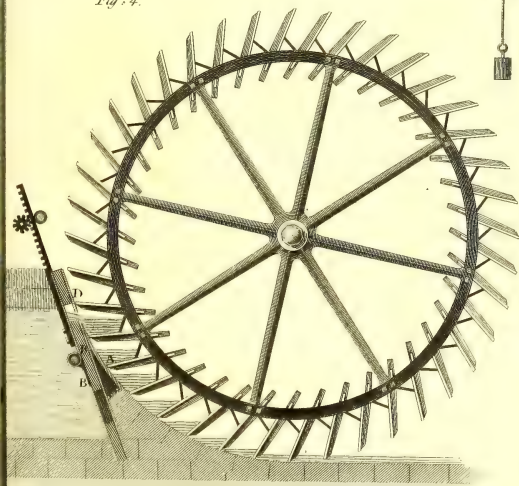
*Breast WHEEL with two Shuttles.*

*Fig. 3.*



*Breast WHEEL in which the water flows over the Shuttle.*

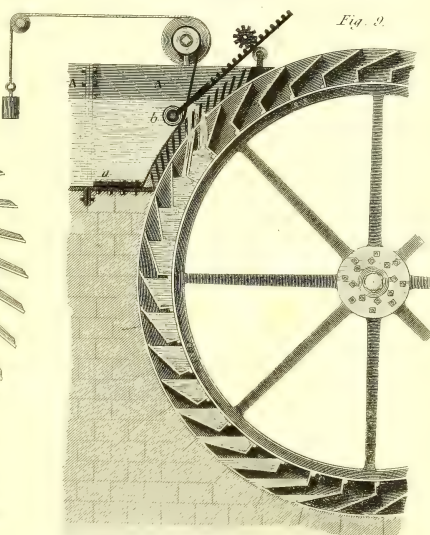
*Fig. 4.*



*Fig. 5.*

*Overshot WHEEL.*

*Fig. 2.*







# WATER WORKS.

*Machines for raising Water.*

Fig. 1.



Fig. 3.

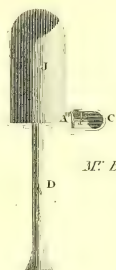


Fig. 2.

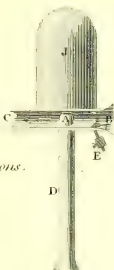


Fig. 6.



Fig. 8.

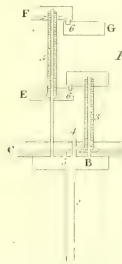


Fig. 10.

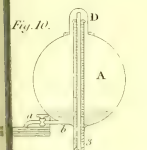
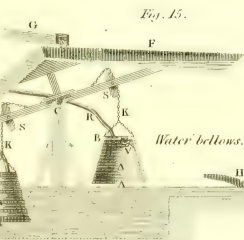


Fig. 11.



Fig. 15.



*M. Boulton.*

*Water bellows.*

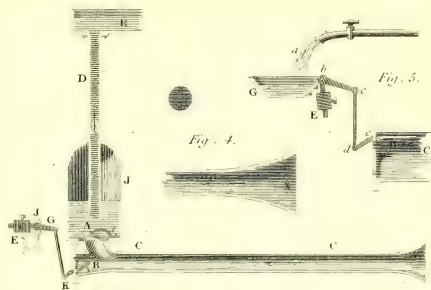


Fig. 4.

Fig. 5.

*M. Whitehurst.*

Fig. 7.

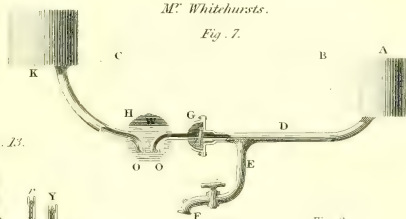


Fig. 13.

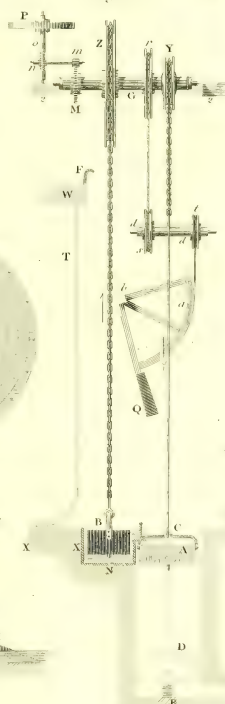
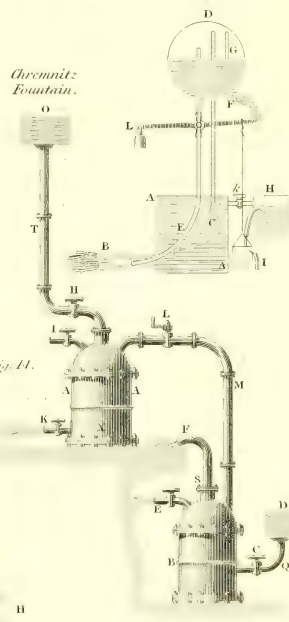
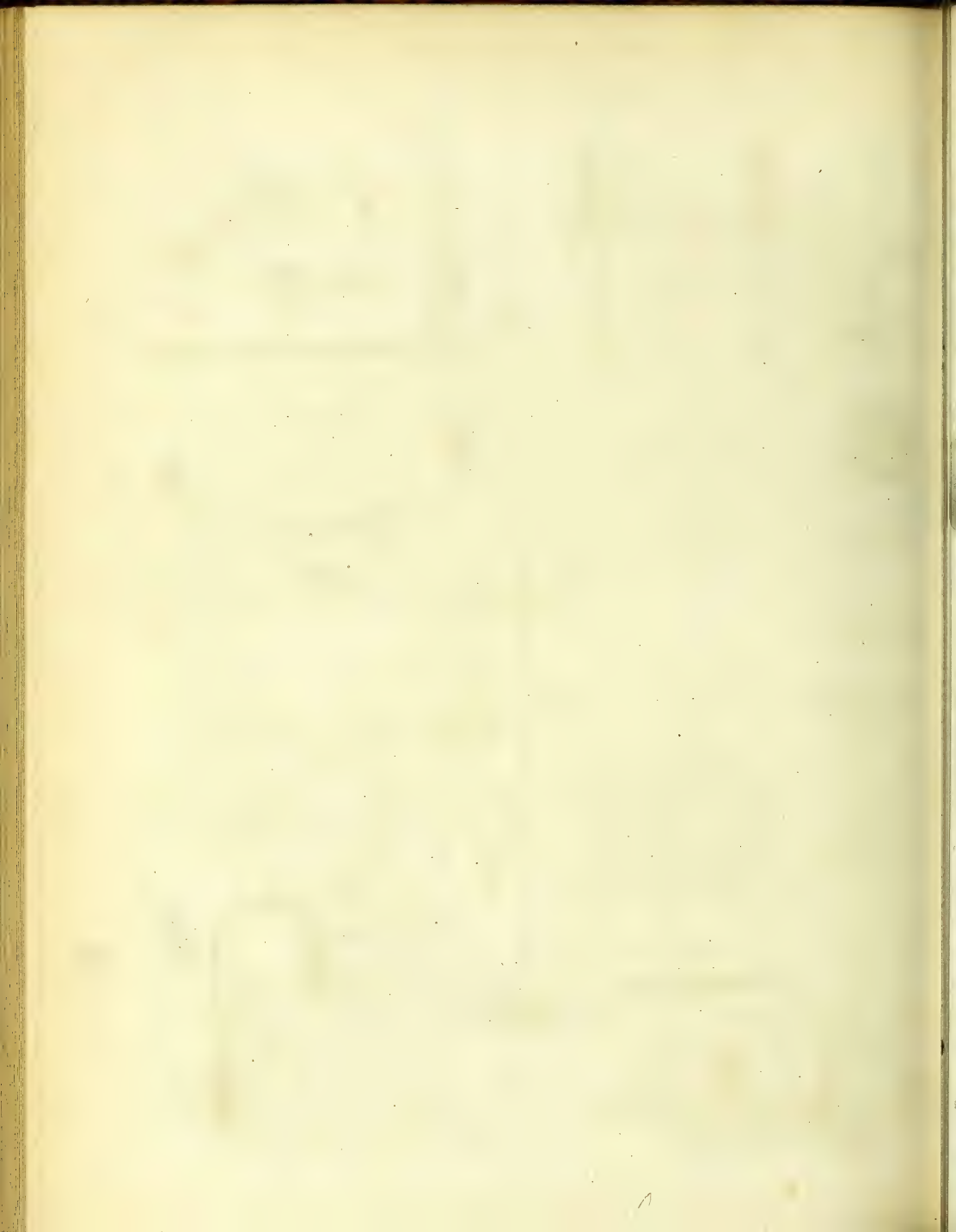


Fig. 9.

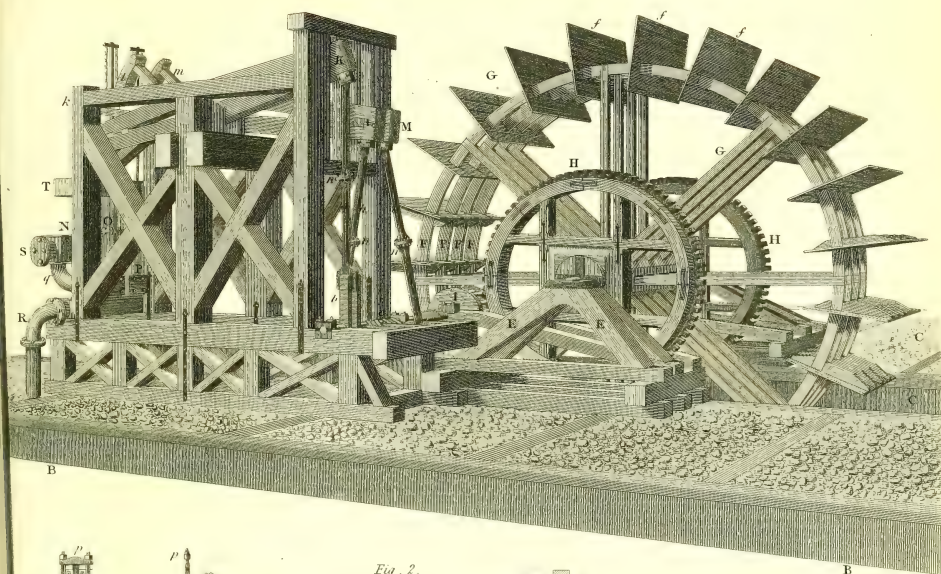
*Ordnance Fountain.*

Fig. 11.



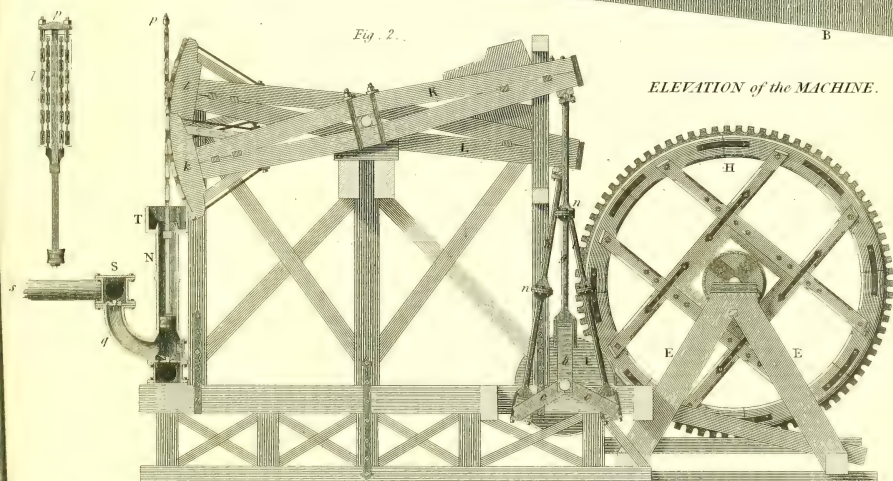


*MACHINE for raising WATER at London Bridge.*

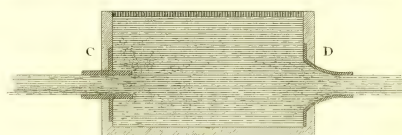
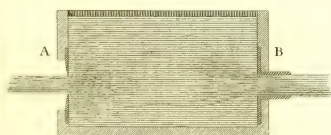


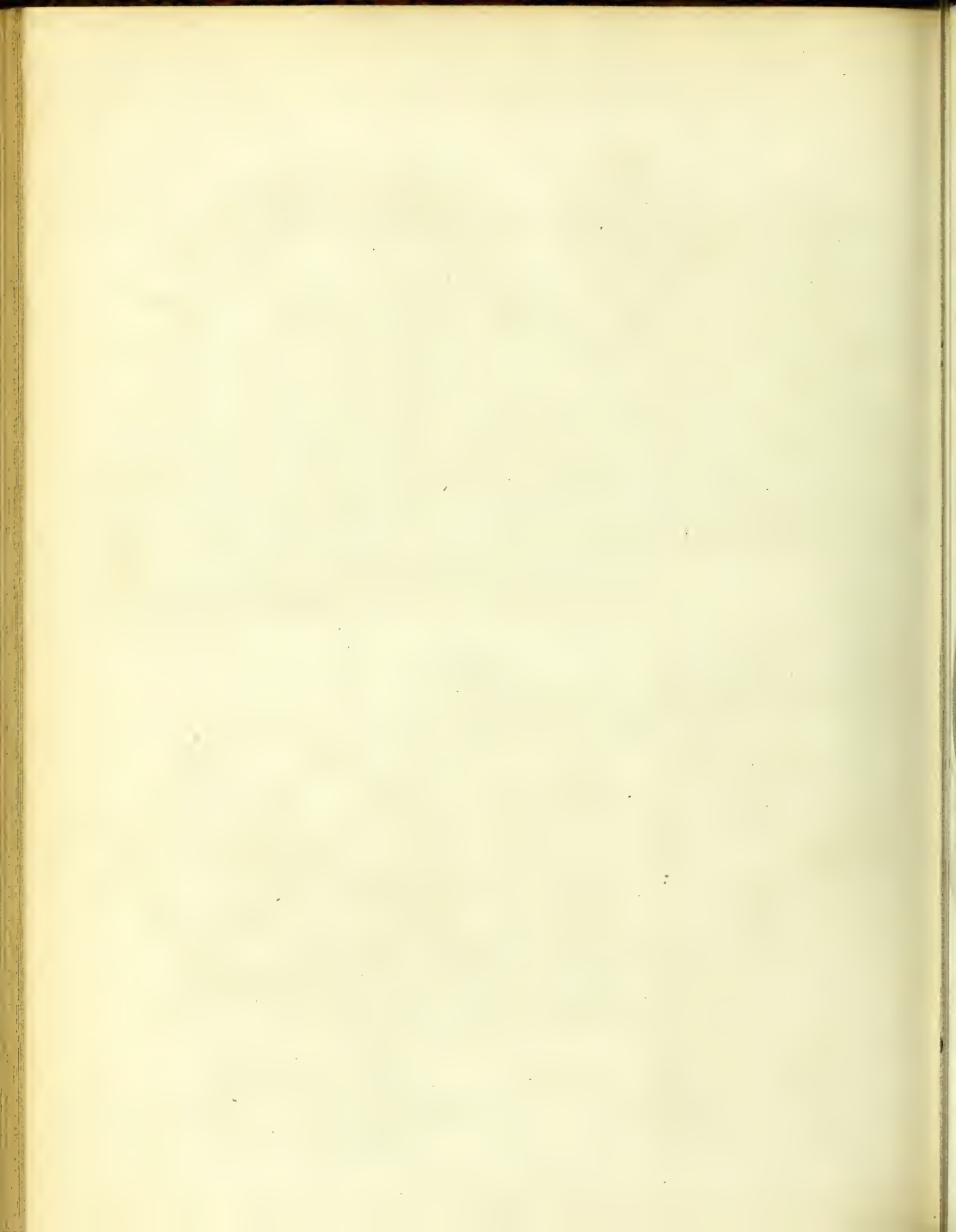
*Fig. 2.*

*ELEVATION of the MACHINE.*



*Fig. 8.*



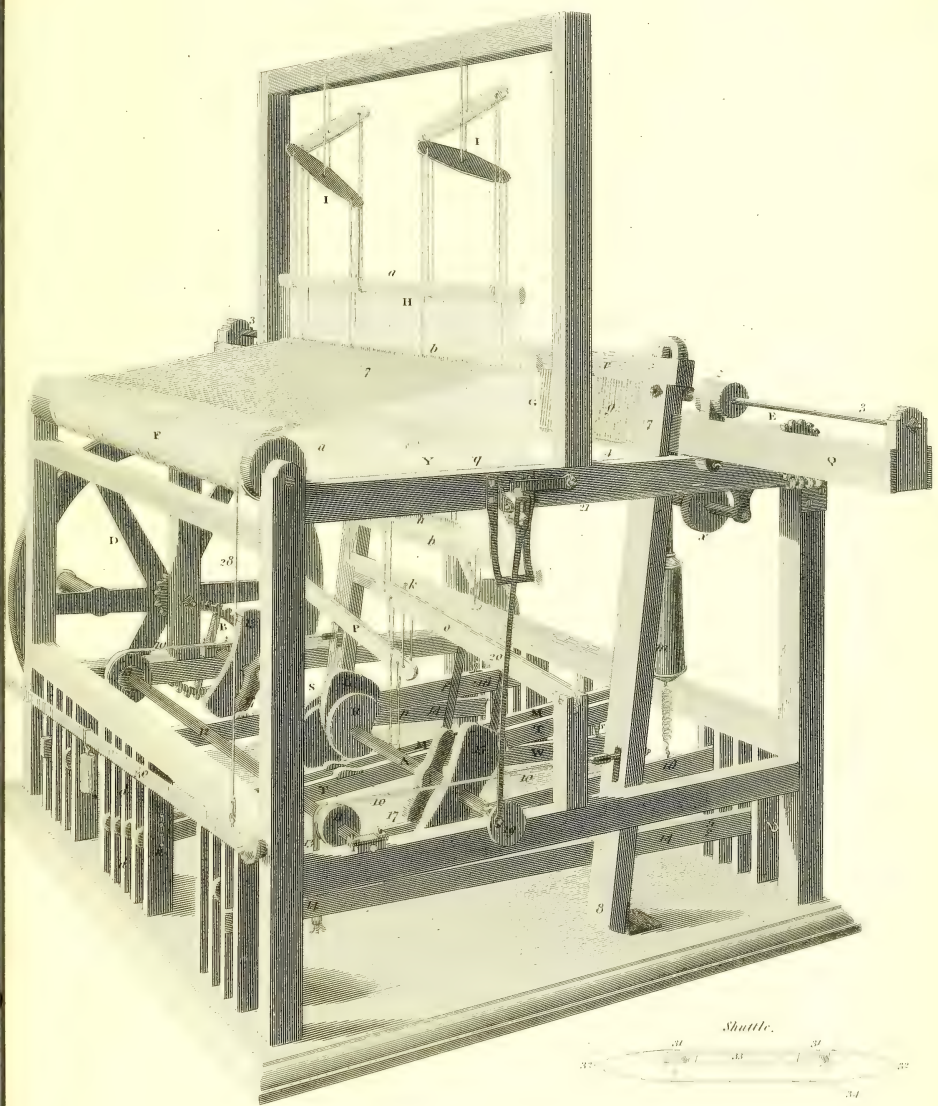




# WEAVING.

PLATE I.

*M. Austin's Engine Loom.*





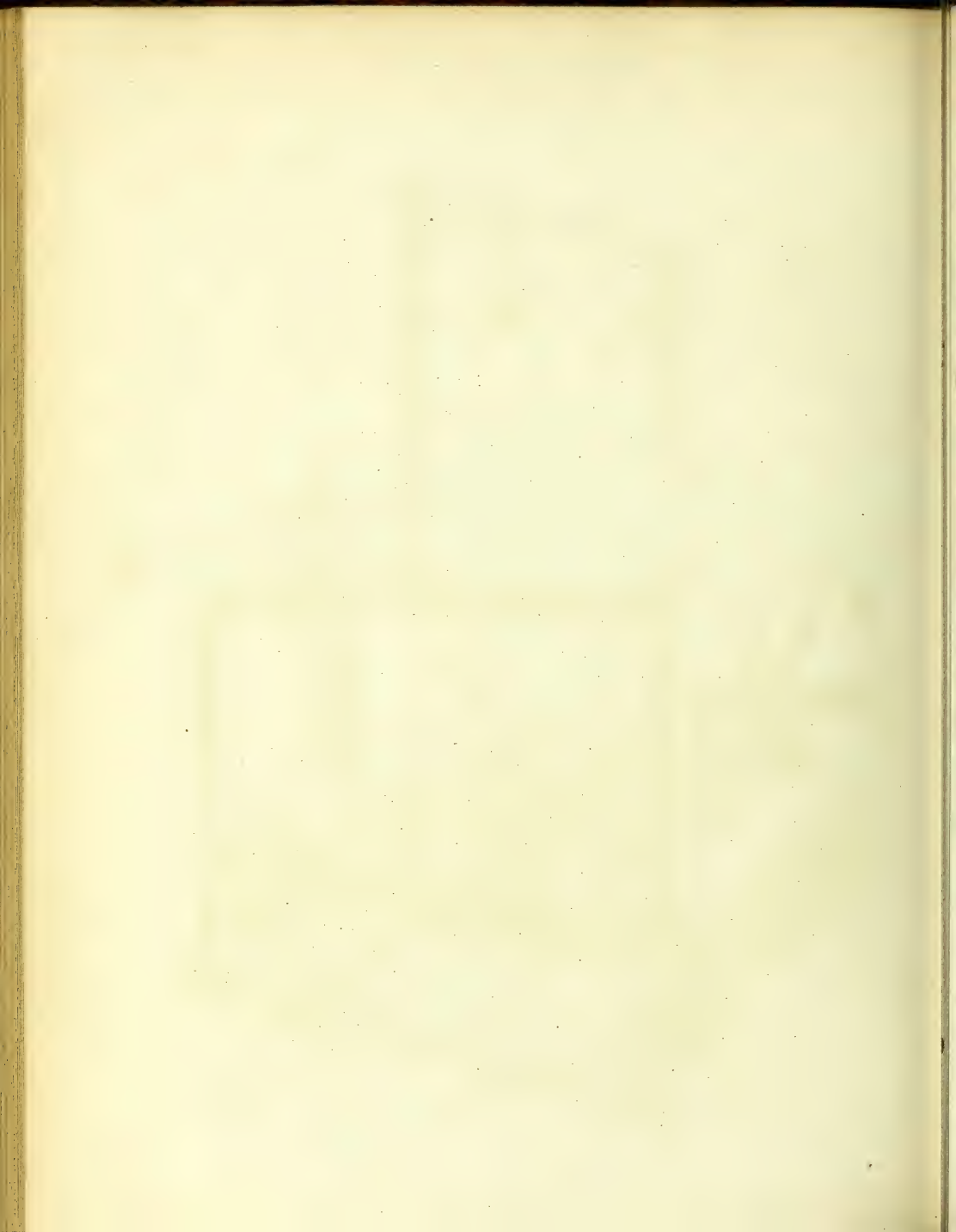


Fig. 2.

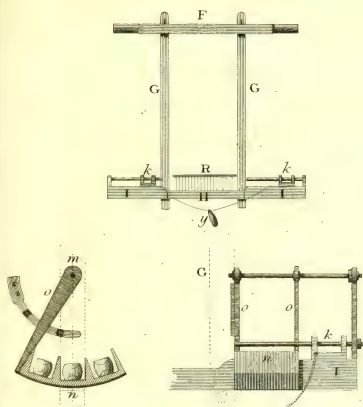


Fig. 1.

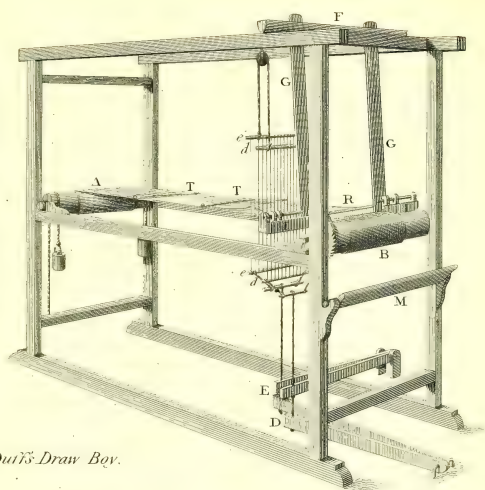


Fig. 3.

Duff's Draw Box.

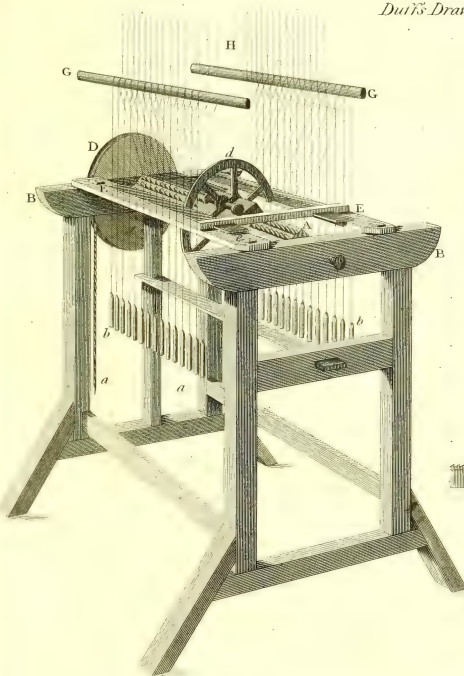
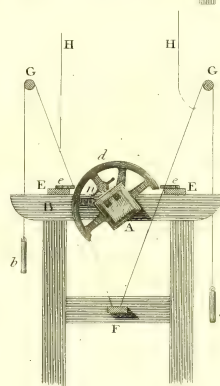
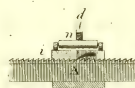
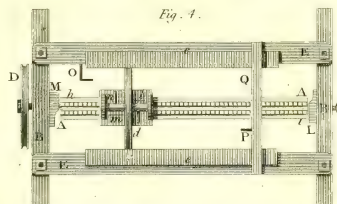


Fig. 4.





# WIND MILL.

Fig. 3.

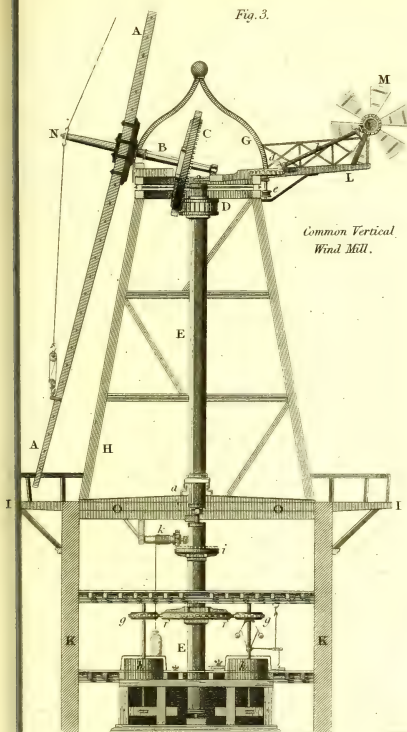


Fig. 1.

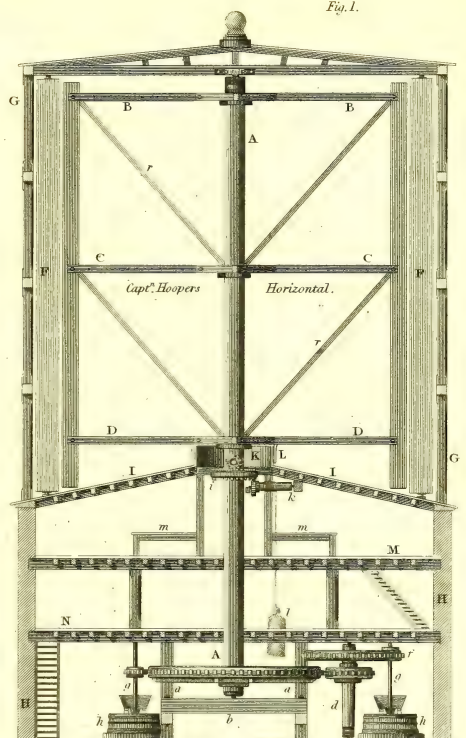


Fig. 5.

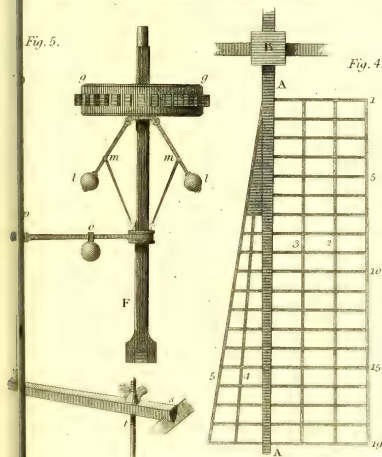


Fig. 4.

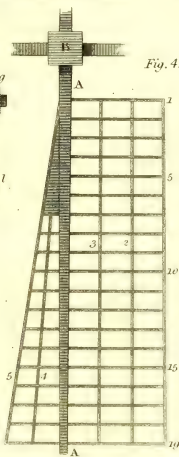


Fig. 2.

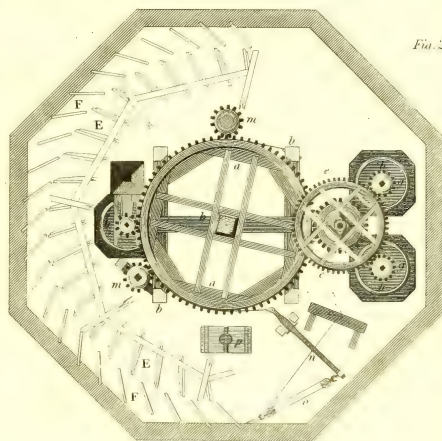






Fig. 5.

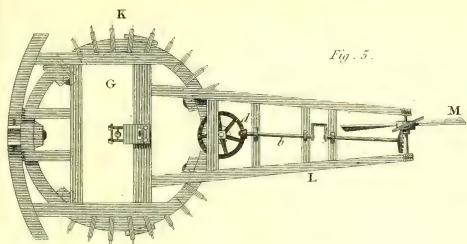


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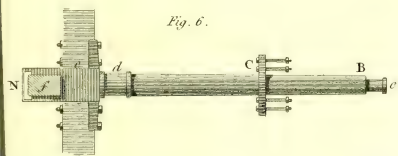


Fig. 7.

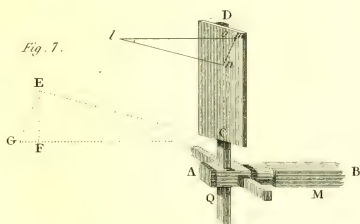


Fig. 4.

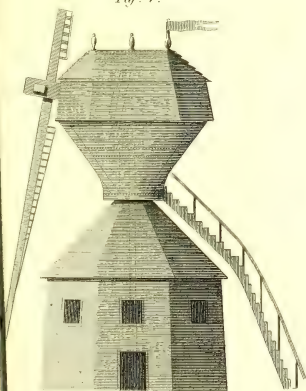


Fig. 2.

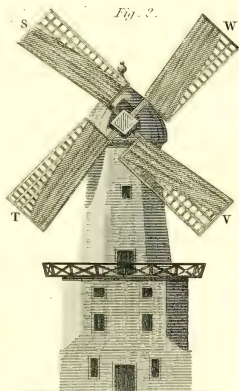


Fig. 3.

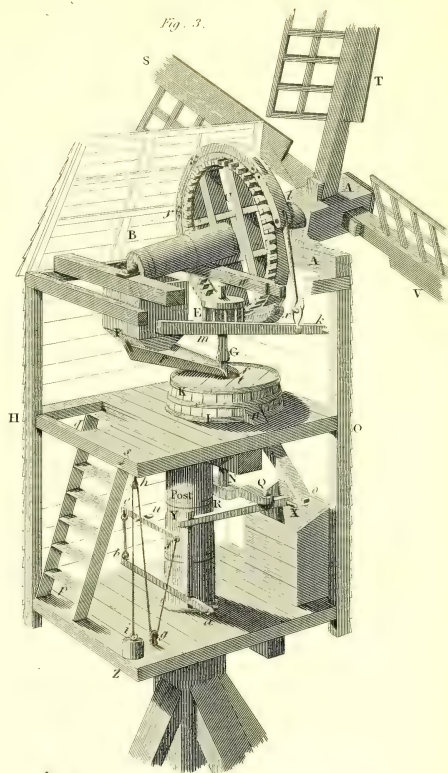
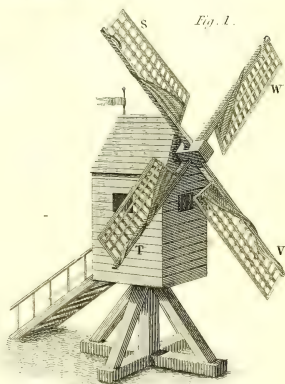
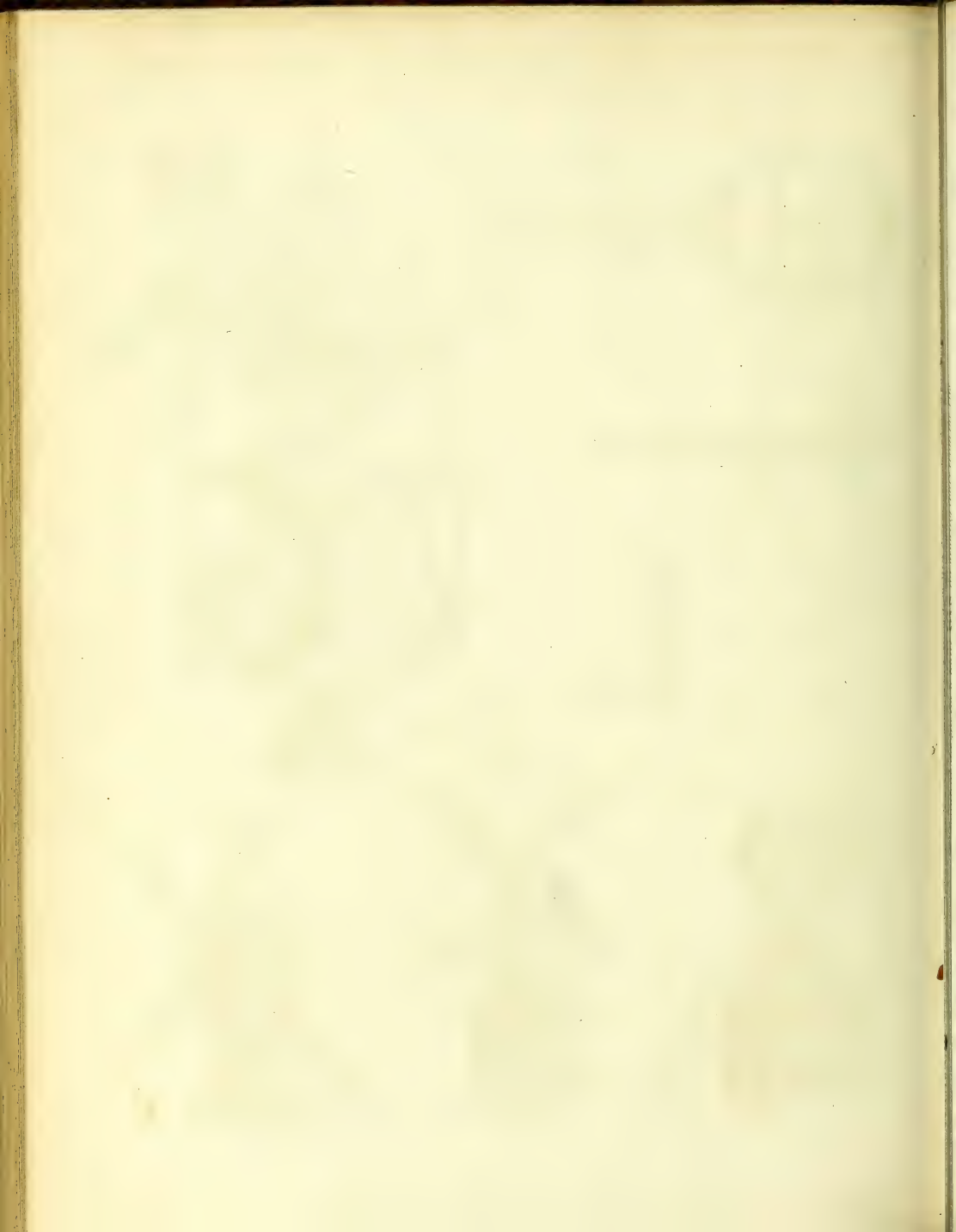


Fig. 1.





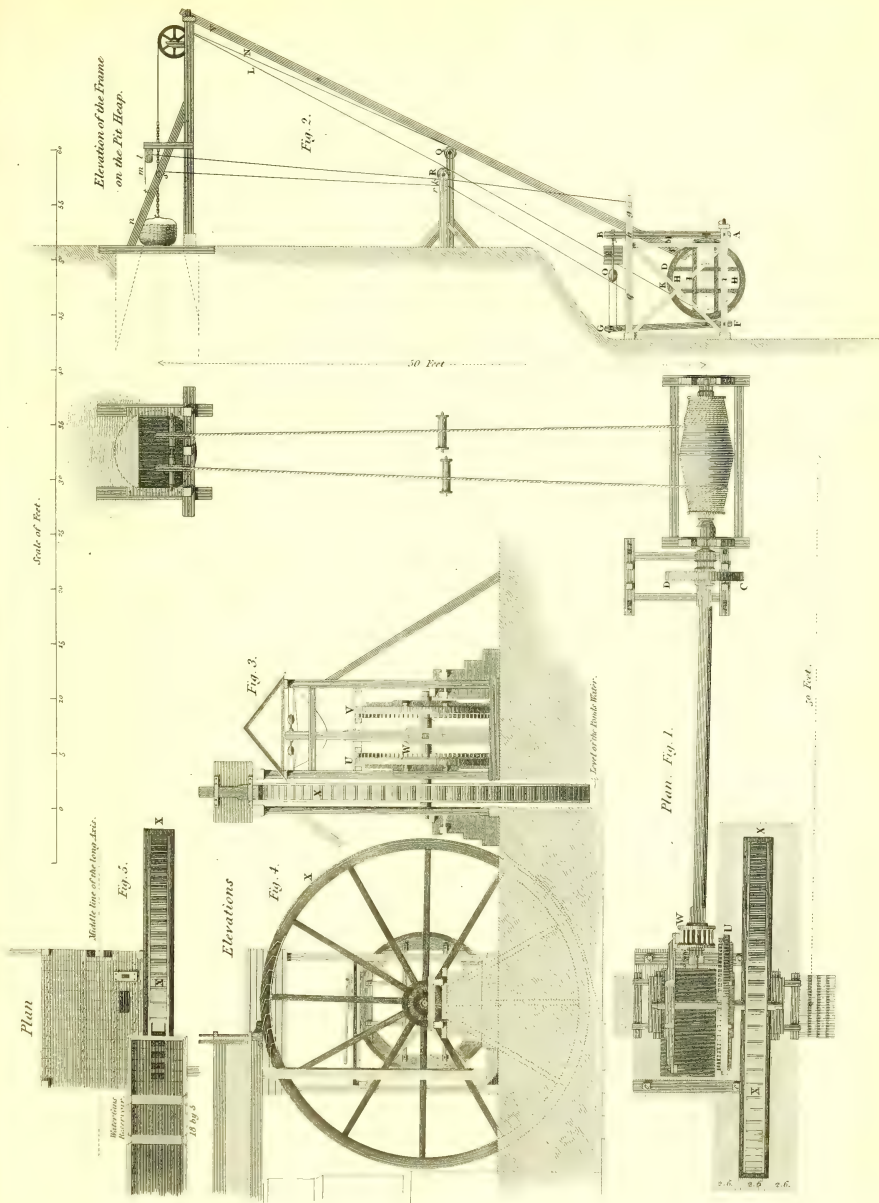






Fig. 2.



Fig. 13.

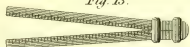


Fig. 3.

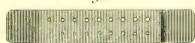


Fig. 4.

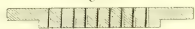


Fig. 12.



Fig. 11.

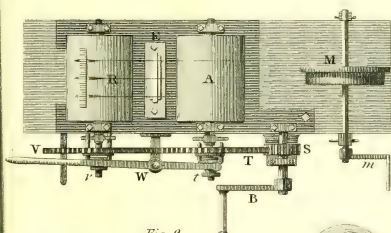
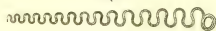


Fig. 9.

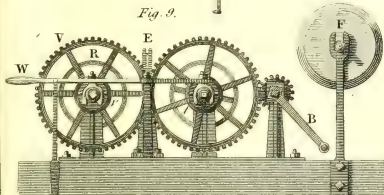


Fig. 10.

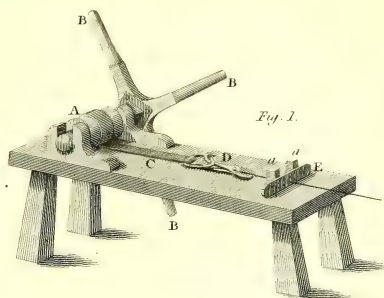
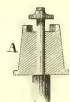
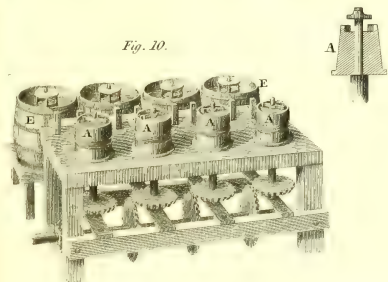


Fig. 1.

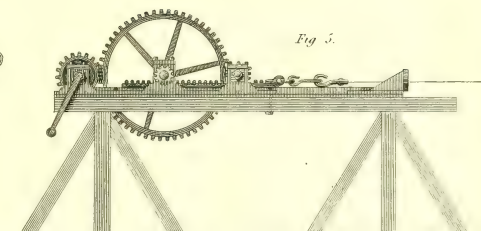


Fig. 5.



Fig. 8.

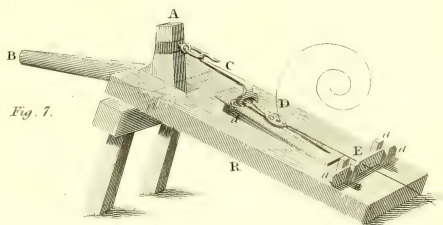
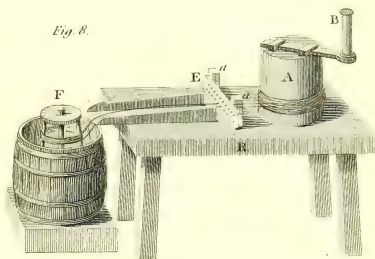
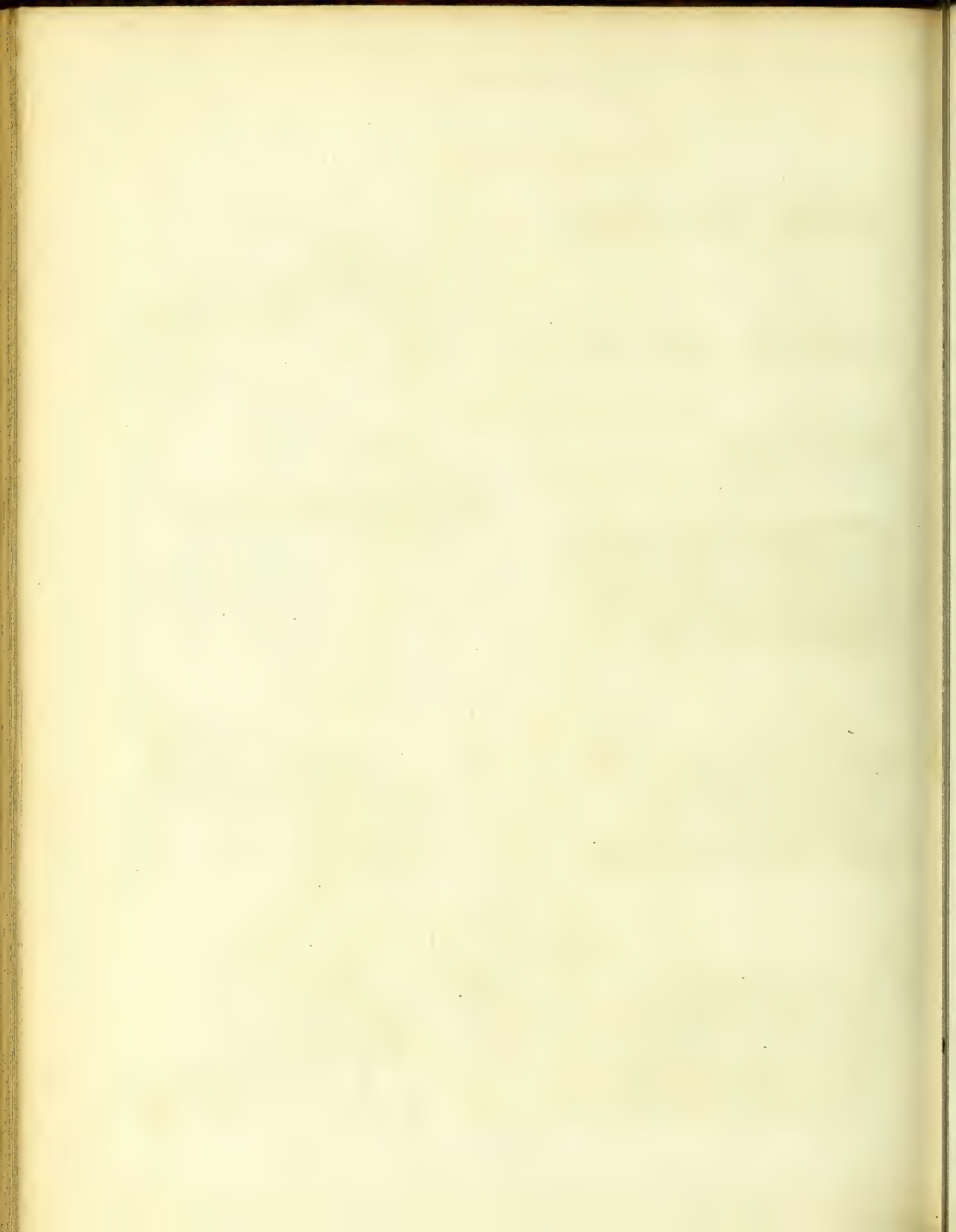
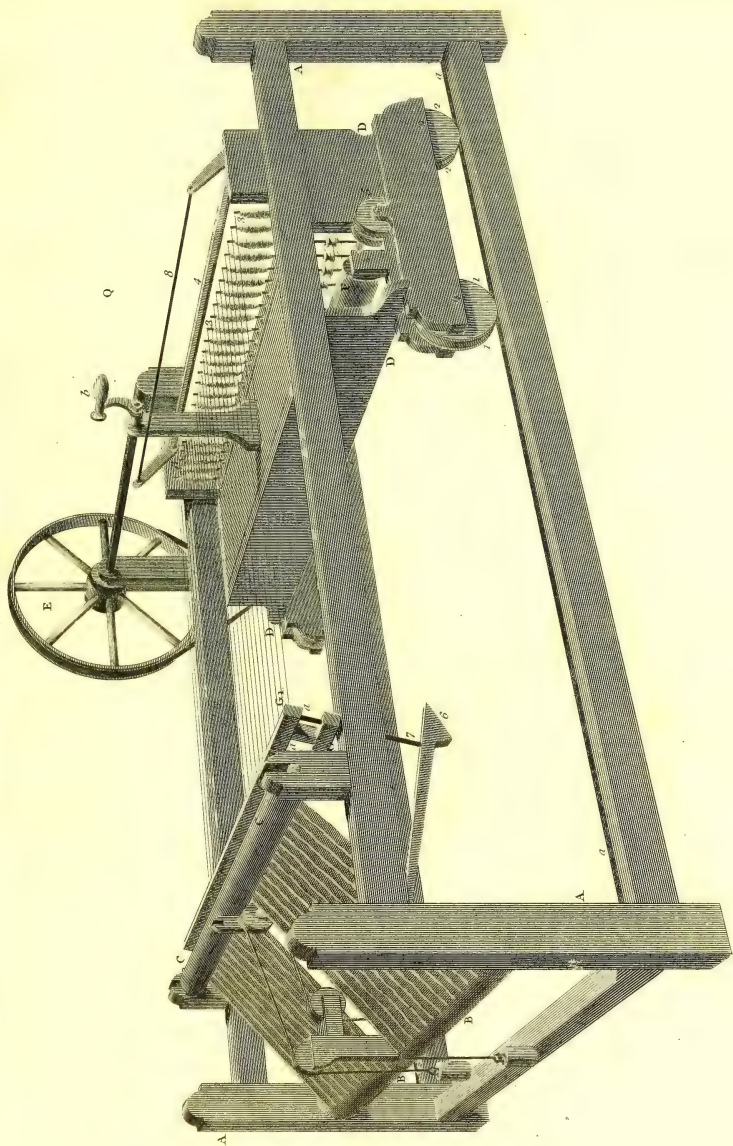


Fig. 7.







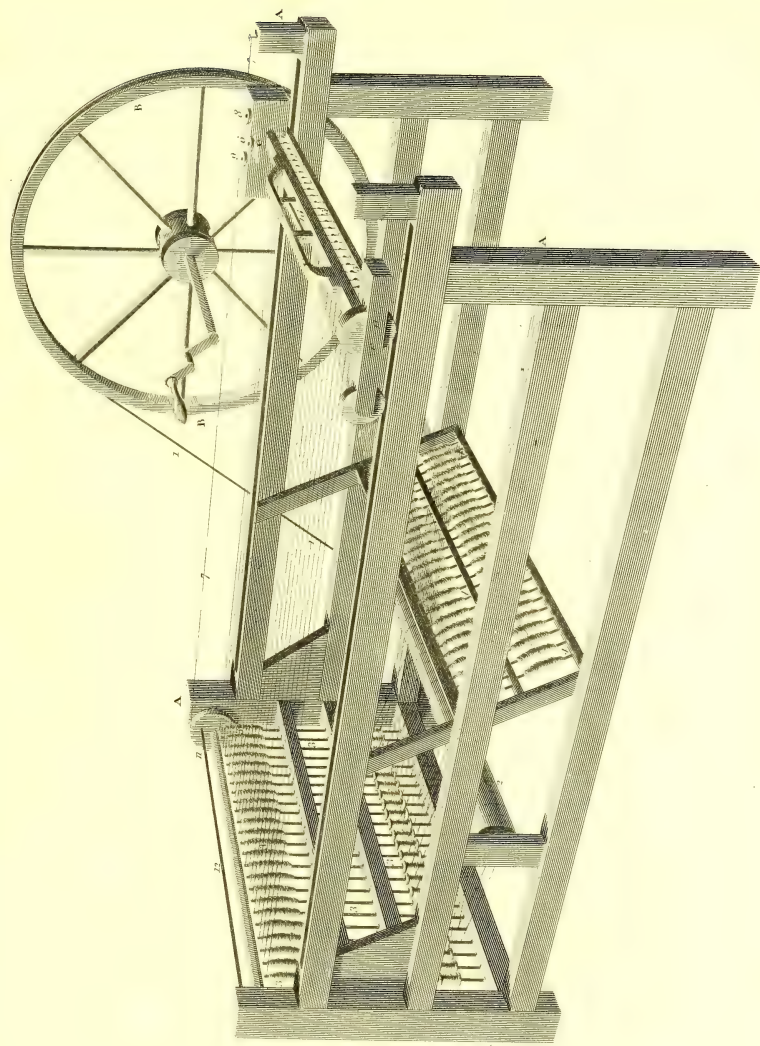
J. Herbert delin.

Published as the Act directs, this by Longman, Hurst, Rees & Orme, Printers to Her Majesty.

Engraved by Wilson Lowry.



# SPINNING JENNY.

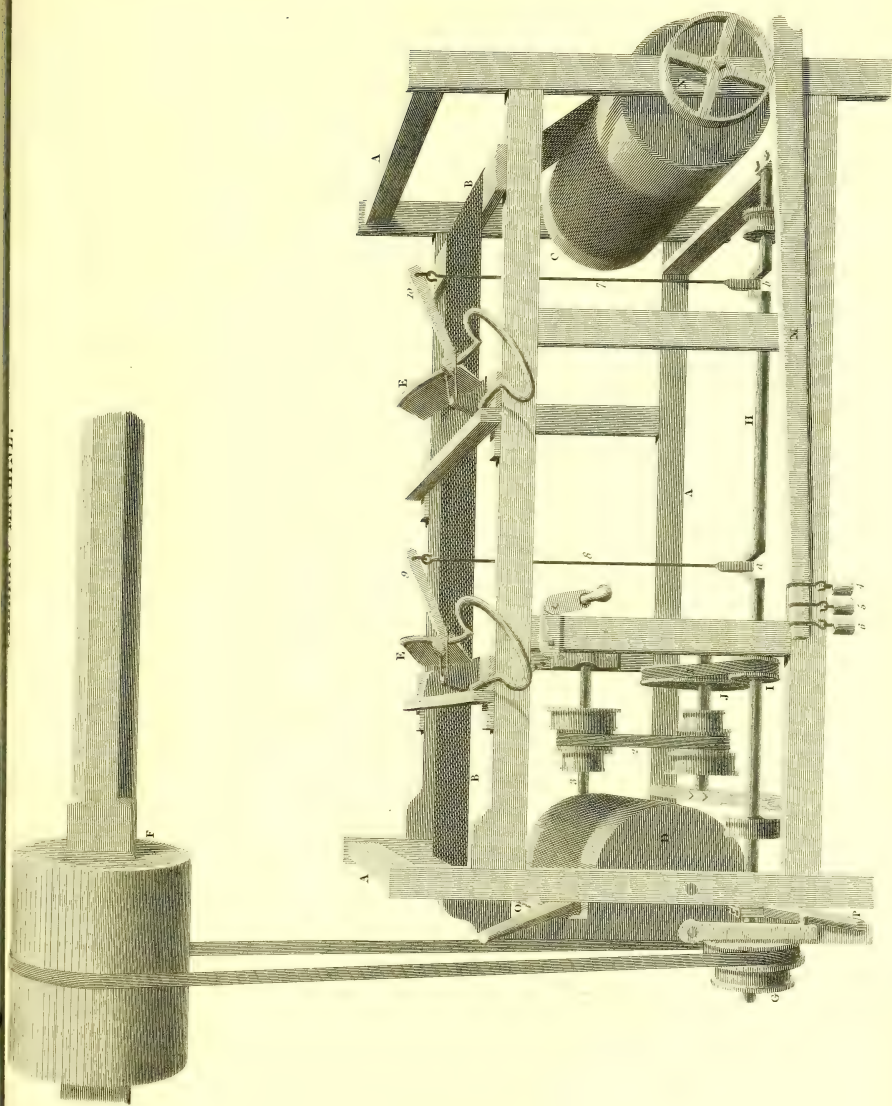


Published as the Act directs, by Longman, Hurst, Roe, and Co., Stationers, Fleet Street, London.

Large scale.



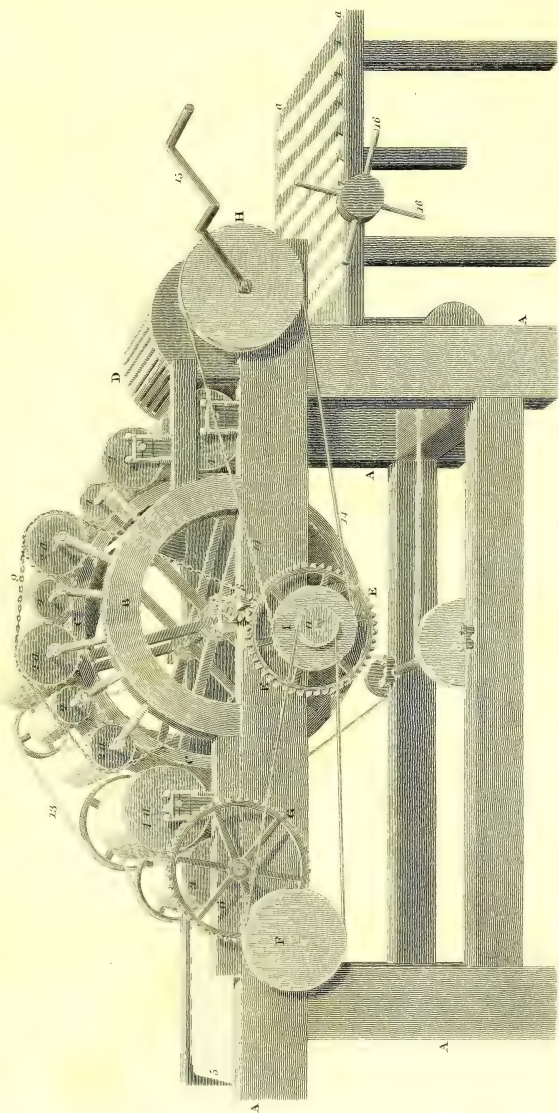




*Published as the Act directs, 1852, by Longman, Taunt, Rees, Orms & Brown, Paternoster Row.*

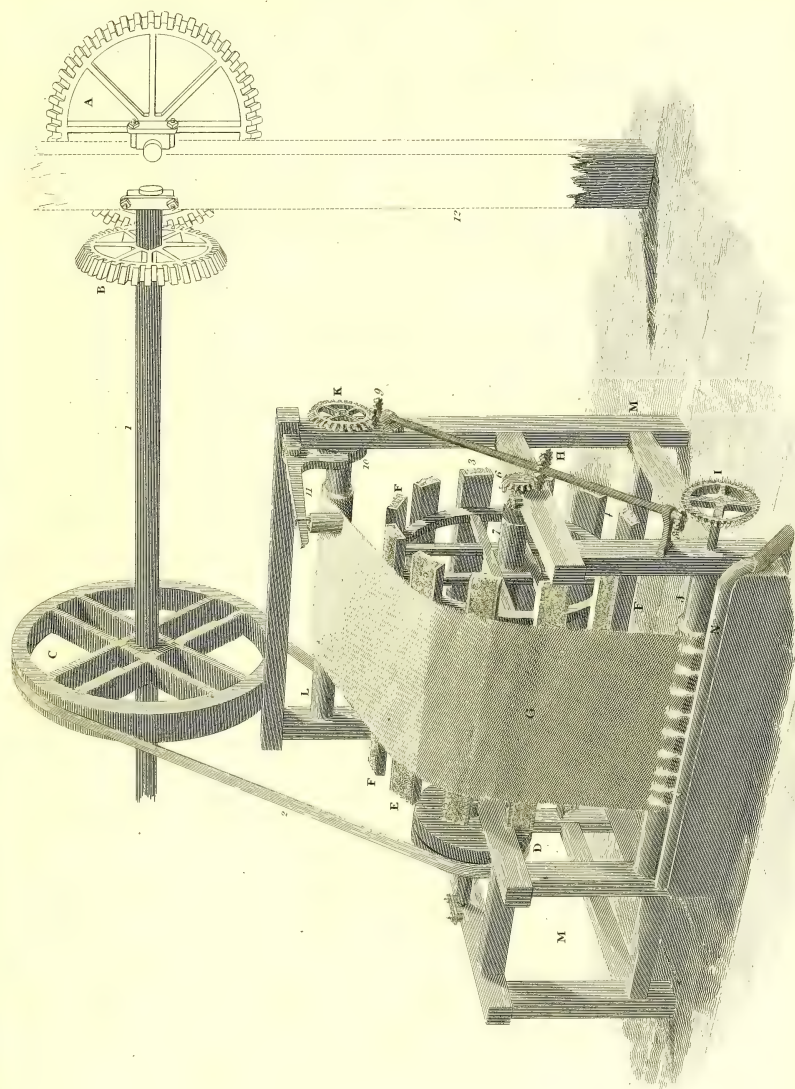
*Engraved by Wilson Lowry.*





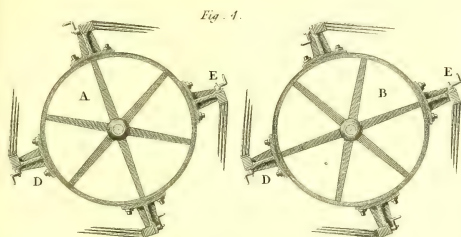




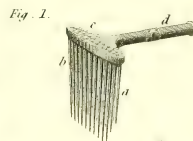
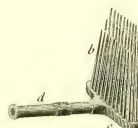
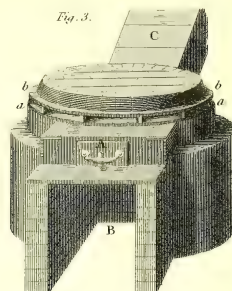
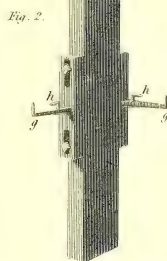
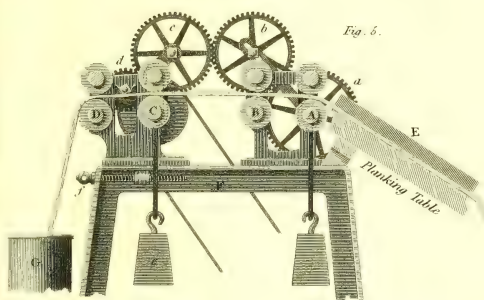








BREAKING Frame.



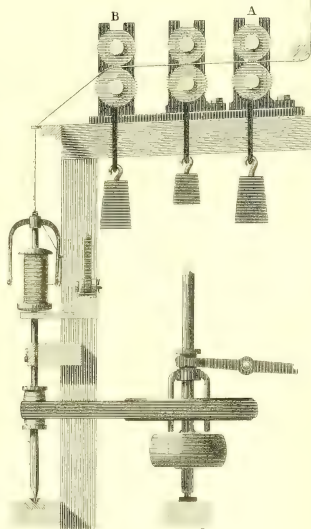
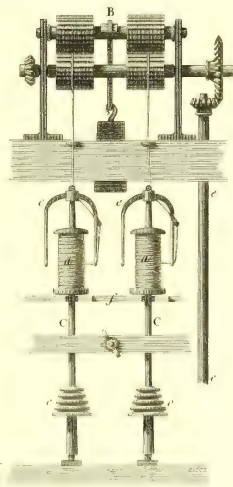
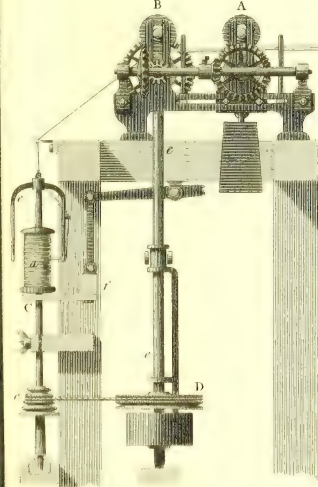
SPINNING Frame.

Fig. 7.



ROVING Frame.

Fig. 6.





WORSTED MANUFACTURE.  
CARTWRIGHT'S COMBING MACHINE.

PLATE II.

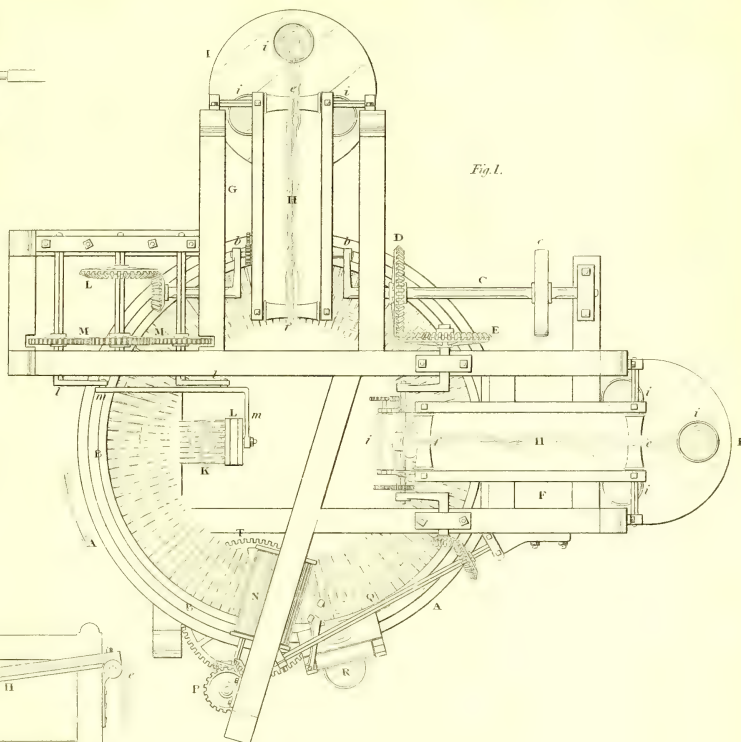
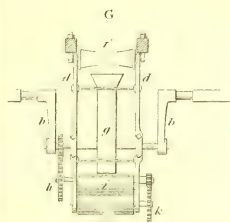


Fig. 5.

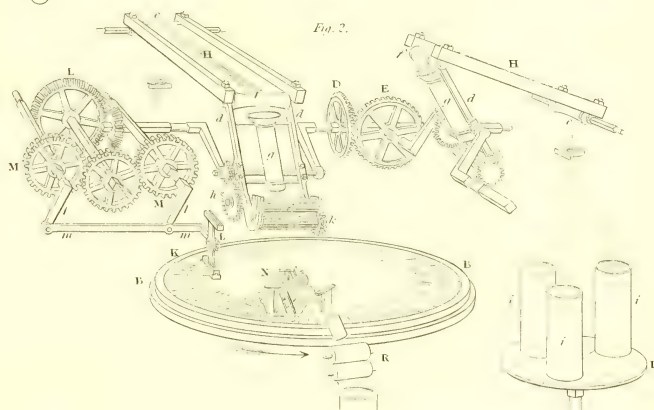
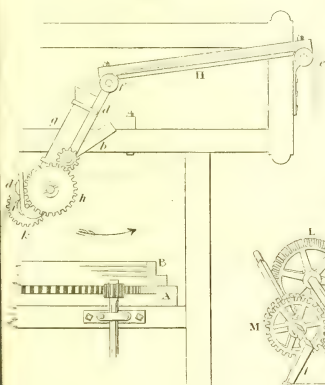
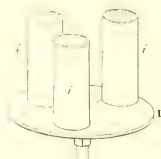


Fig. 2.











WRITING BY CIPHER.

2



*t a c i o u s l u r y x s g k w b f c d m p h g z*

3

near you and ere o'p's we'll ere on e' the gar'dens mi'le d  
and stitl' wh'er e'm an' ya gar'den f'lewer gre'w s'well d

1 Lento

3/4

D major

Op. 92, No. 4

1 2 3 4 5

6 7 8 9 10

11 12 13 14 15

16 17 18 19 20

21 22 23 24 25

26 27 28 29 30

31 32 33 34 35

36 37 38 39 40

41 42 43 44 45

46 47 48 49 50

51 52 53 54 55

56 57 58 59 60

61 62 63 64 65

66 67 68 69 70

71 72 73 74 75

76 77 78 79 80

81 82 83 84 85

86 87 88 89 90

91 92 93 94 95

96 97 98 99 100

101 102 103 104 105

106 107 108 109 110

111 112 113 114 115

116 117 118 119 120

121 122 123 124 125

126 127 128 129 130

131 132 133 134 135

136 137 138 139 140

141 142 143 144 145

146 147 148 149 150

151 152 153 154 155

156 157 158 159 160

161 162 163 164 165

166 167 168 169 170

171 172 173 174 175

176 177 178 179 180

181 182 183 184 185

186 187 188 189 190

191 192 193 194 195

196 197 198 199 200

201 202 203 204 205

206 207 208 209 210

211 212 213 214 215

216 217 218 219 220

221 222 223 224 225

226 227 228 229 230

231 232 233 234 235

236 237 238 239 240

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246 247 248 249 250

251 252 253 254 255

256 257 258 259 260

261 262 263 264 265

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271 272 273 274 275

276 277 278 279 280

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571 572 573 574 575

576 577 578 579 580

581 582 583 584 585

586 587 588 589 590

591 592 593 594 595

596 597 598 599 600

601 602 603 604 605

606 607 608 609 610

611 612 613 614 615

616 617 618 619 620

621 622 623 624 625

626 627 628 629 630

631 632 633 634 635

636 637 638 639 640

641 642 643 644 645

646 647 648 649 650

651 652 653 654 655

656 657 658 659 660

661 662 663 664 665

666 667 668 669 670

671 672 673 674 675

676 677 678 679 680

681 682 683 684 685

686 687 688 689 690

691 692 693 694 695

696 697 698 699 700

701 702 703 704 705

706 707 708 709 710

711 712 713 714 715

716 717 718 719 720

721 722 723 724 725

726 727 728 729 730

731 732 733 734 735

736 737 738 739 740

741 742 743 744 745

746 747 748 749 750

751 752 753 754 755

756 757 758 759 760

761 762 763 764 765

766 767 768 769 770

771 772 773 774 775

776 777 778 779 780

781 782 783 784 785

786 787 788 789 790

791 792 793 794 795

796 797 798 799 800

801 802 803 804 805

806 807 808 809 810

811 812 813 814 815

6

i m p e r i t i a . e t . i n s e t t u a . s c e r  
t t a e i o v u m . e l . a m a v a e n s i a m .  
i n . a u t i s . p r i n e i p o m . t a v t a .  
e s t . a t . m a x i m a . p l e r u n q u e . u  
c o e t e . e t p l e r u n q u e . e t i r m i s . e  
t . e u t i t i b u s . e e m m i t t a n t a r .



# WRITING BY CIPHER.

## Alphabet and Key.

b	c	s	m	t	l	i	c	o
g	m	t	p	u	h	o	i	a
j	p	u	d	a	n	h	o	e
k	d	y	r	c	r	n	s	i
q	r	a	l	i	s	r	t	o
v	t	e	h	o	t	s	u	a
w	h	i	n	c	a	t	a	c
x	n	o	r	d	a	u	c	i
z	r	.	s	t	e	a	i	o

White's Copy.

Handwriting practice lines for cipher writing, consisting of multiple rows of dotted lines on a four-line grid.

32 31 30 29 28 27 26 25 24 23 22 21 20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1





